

PHILIPS

14HT3152

MODEL

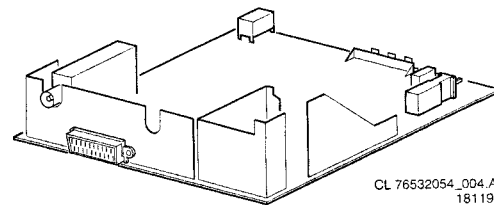
SERVICE MANUAL



Service Service Service

A7H.1

AA

CL 76532054_004.AI
181197

Service Manual

Table of contents

Page

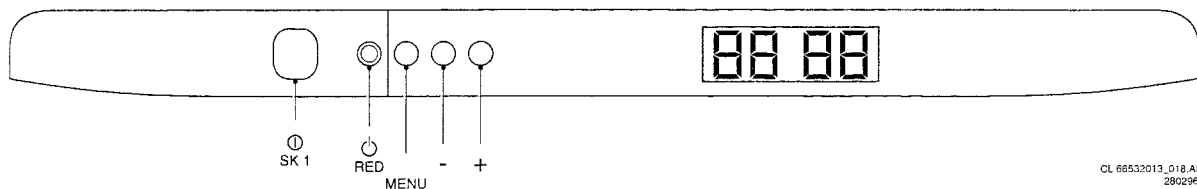
1.	Technical specifications	2		
2.	Connection facilities	2		
	Location of panels	2		
3.	Safety instructions, Maintenance instructions, Warnings and Notes	3		
4.	Mechanical instructions	3		
5.	Block diagram	4		
	Survey of test points	5		
	Overview wave forms	5		
	Diagram supply voltages survey	5		
6.	Fault finding tree	6		
	Repair facilities	6		
7.	<i>Electrical diagrams and print lay-outs</i>		<i>Diagram</i>	<i>PWB</i>
	Power supply (Diagram A1)	9		8
	Deflection (Diagram A3)	10		8
	Synchronisation (Diagram A4)	11		8
	Controls (Diagram A5)	12		8
	Tuner + IF + Scart (Diagram A6)	13		8
	Video + sound (Diagram A7)	14		8
	Smart loader interface (Diagram A6a)	15		15
	Interface (Diagram A8)	15		8
	Teletext (Diagram A9)	16		8
	CRT (14" mn, 20"+21" nn) (Diagram B1)	17		17
	Clock-display (Diagram E1)	18		18
	Radio-module (Diagram E2)	18		18
8.	Electrical adjustments	19		
9.	Circuit description	19		
10.	Directions for use	21		
11.	List of abbreviations	22		
12.	Spare parts list	23		



1. Technical specifications

Mains voltage	: 220 - 240 V \pm 10% AC; 50 Hz \pm 5%	Indications	: On Screen Display (OSD) green/red
Power cons. at 220V~	: 14" 43 W (stand-by \leq 6 W) : 17" 45 W (stand-by \leq 6 W) : 21" 63 W (stand-by \leq 6 W)		: 1 LED (\odot red for stand-by, \odot green for TV-on, blinking red for "RC5" and error code)
Aerial input impedance TV	: 75 Ω - coax	VCR programs	: 0
Min. aerial input VHF	: 30 μ V	Tuning and operating system	: \square PLL
Min. aerial input UHF	: 40 μ V		
Max. aerial input VHF/UHF	: 180mV	UV916E / IEC (PLL)	: VHFa: 48 - 118 MHz : VHFb: 118 - 300 MHz : Hyper: 300 - 470 MHz : UHF: 470 - 861 MHz : UHF: 470 - 861 MHz
Pull-in range colour sync	: \pm 300Hz	U944 / IEC (PLL)	
Pull-in range horizontal sync	: \pm 600Hz		
Pull-in range vertical sync	: \pm 5Hz		
Picture tube range	: 14", 17", 21" : 1 W mono execution: 4" full range round 25 Ω 2W : 3 W mono execution: 4" woofer round 16 Ω 3W 1" tweeter round 16 Ω 3W		
TV Systems	: PAL I : PAL BG : PAL BG / SECAM BGDK : PAL BG / SECAM BGLL'		

Local operating functions



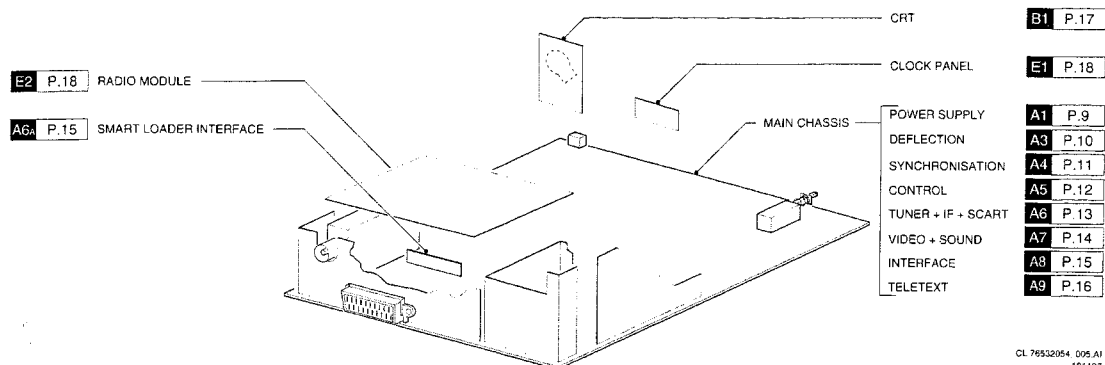
CL 66532013_018.AI
280296

2. Connection facilities

Euroconnector:

1 - Audio \oplus R (0V5 RMS \leq 1k Ω)	14 - +5SI to smart-loader
2 - Audio \ominus R (0V2 - 2V RMS \geq 10k Ω)	15 - Red (0V7 _{pp} /75 Ω)
3 - Audio \oplus L (0V5 RMS \leq 1k Ω)	16 - RGB-status (0-0V4 int.)(1-3V ext. 75 Ω)
4 - Audio \perp	17 - CVBS \perp
5 - Blue \perp	18 - CVBS \perp
6 - Audio \ominus L (0V2 - 2V RMS \geq 10k Ω)	19 - CVBS \oplus (1V _{pp} /75 Ω)
7 - Blue (0V7 _{pp} /75W)	20 - CVBS \ominus (1V _{pp} /75 Ω)
8 - CVBS-status 1 \ominus (0-2V int., 10-12V ext.)	21 - Earthscreen
9 - Green \perp	
10 - SDA to smart-loader	
11 - Green (0V7 _{pp} /75 Ω)	
12 - SCL to smart-loader	
13 - Red \perp	

Location of panels



CL 76532054_005.AI
181197

3. Safety instructions, Maintenance instructions, Warnings and Notes

Chassis A7H.1 3

Safety instructions for repairs

1. Safety regulations require that **during** a repair:
 - The set should be connected to the mains via an isolating transformer;
 - Safety components, indicated by the symbol " ", should be replaced by components identical to the original ones;
 - When replacing the CRT, safety goggles must be worn.
2. Safety regulations require that **after** a repair the set must be returned in its original condition. In particular attention should be paid to the following points:
 - As a strict precaution, we advise you to resolder the solder joints through which the horizontal deflection current is flowing, in particular:
 - all pins of the line output transformer (LOT);
 - fly-back capacitor(s);
 - S-correction capacitor(s);
 - line output transistor;
 - pins of the connector with wires to the deflection coil;
 - other components through which the deflection current flows.

Note:

This resoldering is advised to prevent bad connections due to metal fatigue in solder joints and is therefore only necessary for television sets older than 2 years.

- The wire trees and EHT cable should be routed correctly and fixed with the mounted cable clamps.
- The insulation of the mains lead should be checked for external damage.
- The mains lead strain relief should be checked for its function in order to avoid touching the CRT, hot components or heat sinks.
- The electrical DC resistance between the mains plug and the secondary side should be checked (only for sets which have a mains isolated power supply). This check can be done as follows:
 - unplug the mains cord and connect a wire between the two pins of the mains plug;
 - set the mains switch to the on position (keep the mains cord unplugged!);
 - measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MΩ and 12 MΩ;
 - switch off the TV and remove the wire between the two pins of the mains plug.
- The cabinet should be checked for defects to avoid touching of any inner parts by the customer.

Maintenance instructions


It is recommended to have a maintenance inspection carried out by a qualified service employee. The interval depends on the usage conditions:

- When the set is used under normal circumstances, for example in a living room, the recommended interval is 3 to 5 years.
- When the set is used in circumstances with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is 1 year.

The maintenance inspection contains the following actions:

- Execute the above mentioned 'general repair instruction'.
- Clean the power supply and deflection circuitry on the chassis.
- Clean the picture tube panel and the neck of the picture tube.

Warnings


1. In order to prevent damage to ICs and transistors, all high-voltage flashovers must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx. 30s).
2. **ESD**  All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.

Available ESD protection equipment:

anti-static table mat;	
large 1200x650x1.25mm	4822 466 10953
anti-static table mat;	
small 600x650x1.25mm	4822 466 10958
anti-static wristband	4822 395 10223
connection box	
(3 press stud connections, 1 MΩ)	4822 320 11307
extension cable (2 m, 2 MΩ;	
to connect wristband to connection box)	4822 320 11305
connecting cable (3 m, 2 MΩ;	
to connect table mat to connection box)	4822 320 11306
earth cable (1 MΩ; to connect any	
product to mat or connection box)	4822 320 11308
complete kit ESD3 (combining all 6 prior	
products; small table mat)	4822 310 10671
wristband tester	4822 344 13999

3. Together with the deflection unit and any multipole unit, the flat square picture tubes used from an integrated unit. The deflection and the multipole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.
4. Be careful during measurements in the high-voltage section and on the picture tube.
5. Never replace modules or other components while the unit is switched on.
6. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

Notes

1. The direct voltages and oscillograms should be measured with regard to the tuner earth (\perp), or hot earth (\perp) as this is called.
2. The direct voltages and oscillograms shown in the diagrams are indicative and should be measured in the **Service Default Mode** (see chapter 6) with a colour bar signal and stereo sound (L:3 kHz, R:1 kHz unless stated otherwise) and picture carrier at 475.25 MHz.
3. Where necessary, the oscillograms and direct voltages are measured with (T) and without aerial signal (X). Voltages in the power supply section are measured both for normal operation (⊕) and in standby (⊖). These values are indicated by means of the appropriate symbols.
4. The picture tube PWB has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
5. The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
6. Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY, the double D symbol  and PRO LOGIC are trademarks of Dolby Laboratories Licensing Corporation.

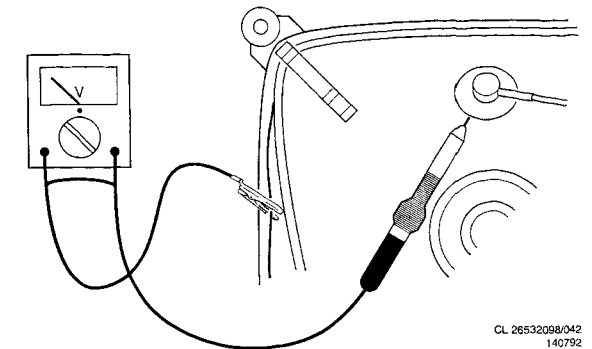


Fig. 3.1

4. Mechanical instructions

For the main carrier two service positions are possible (Fig. 4.1):

- A: For faultfinding on the component side of the main carrier.
- B: For (de)soldering activities on the copper side of the main carrier.

Position A can be reached by first removing the mains cord from its fixation, then loosen the carrier lips (1) and then pulling the carrier panel (2) for approximately 10 cm.

Position B can be reached from position A after disconnecting the degaussing cable.

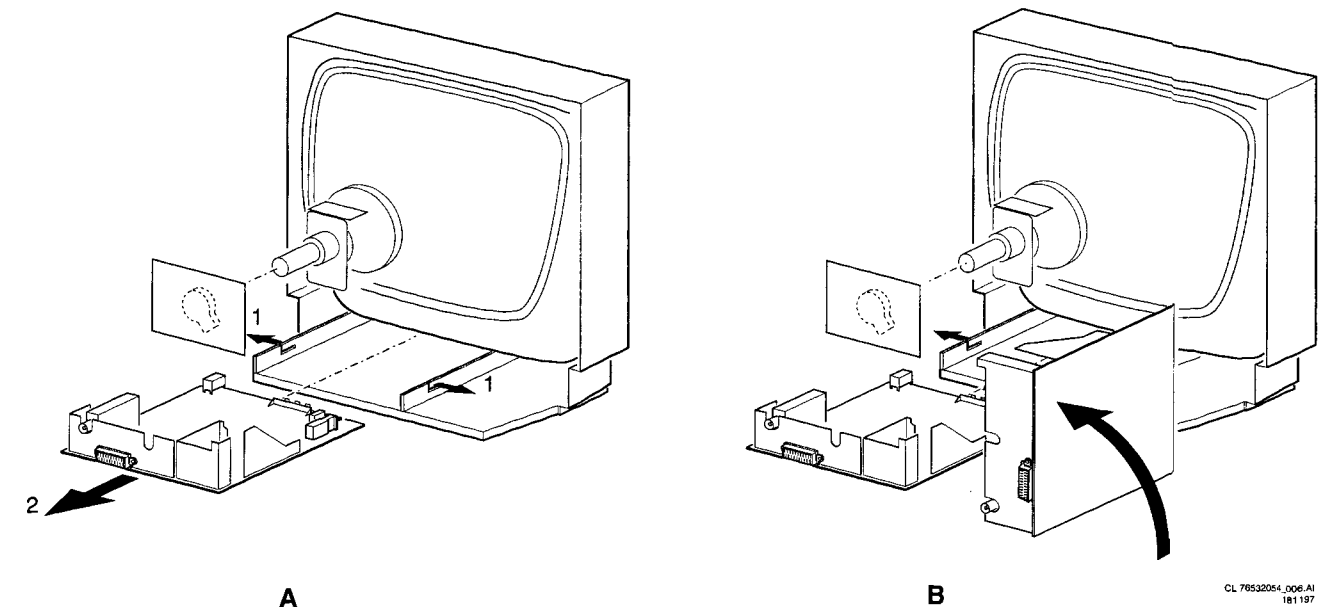
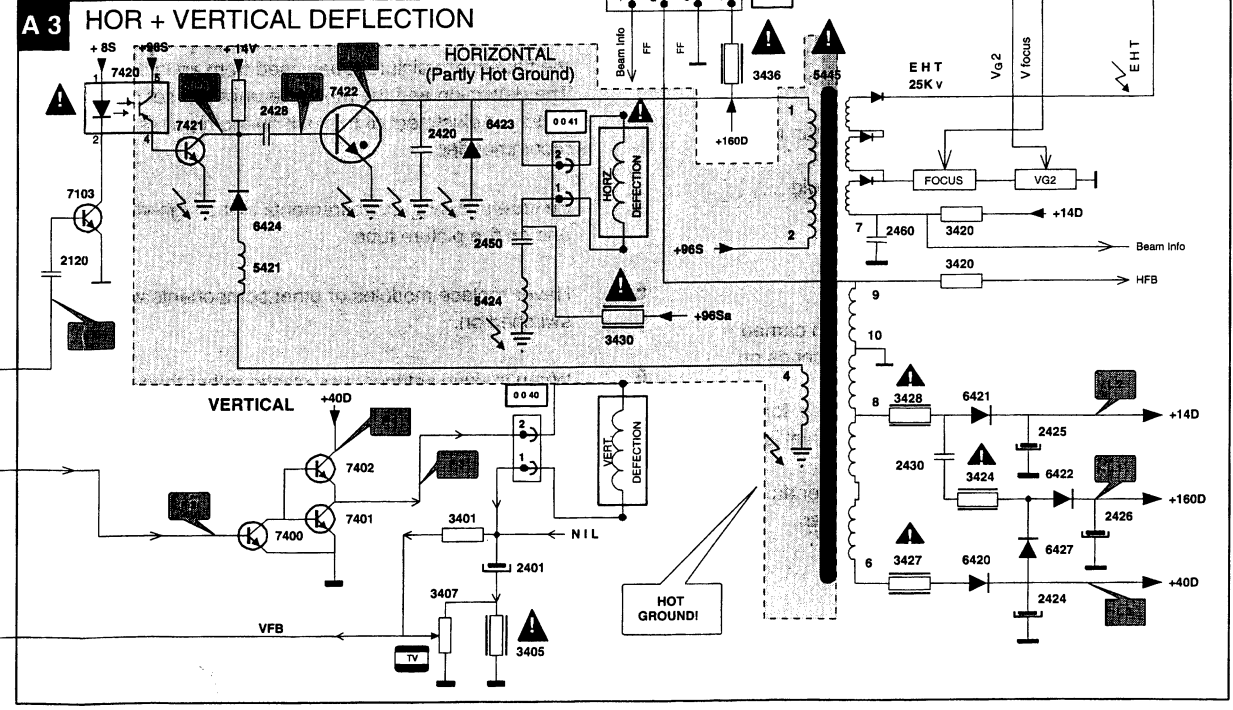
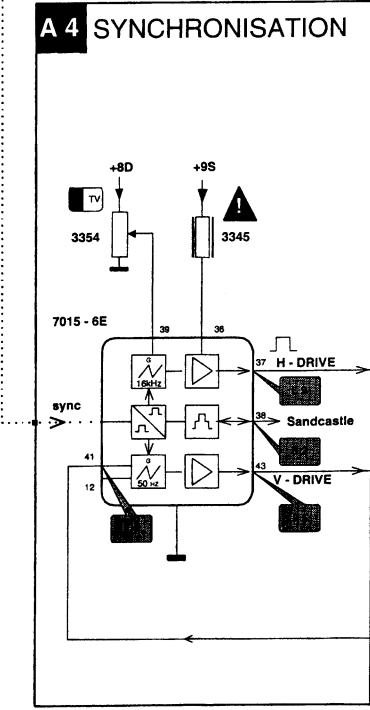
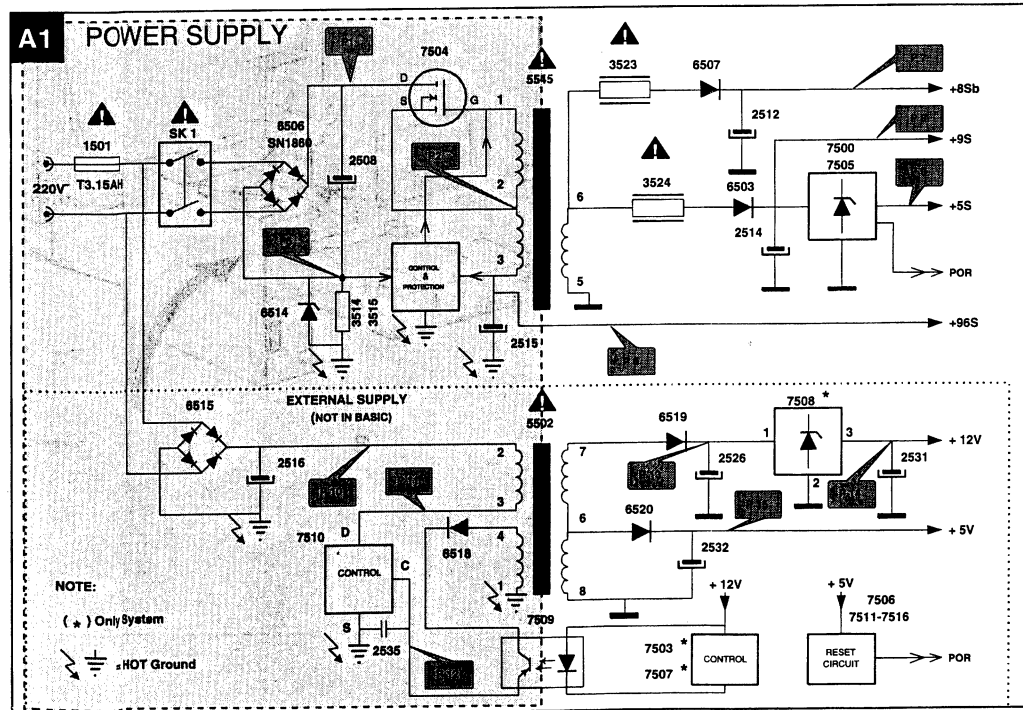
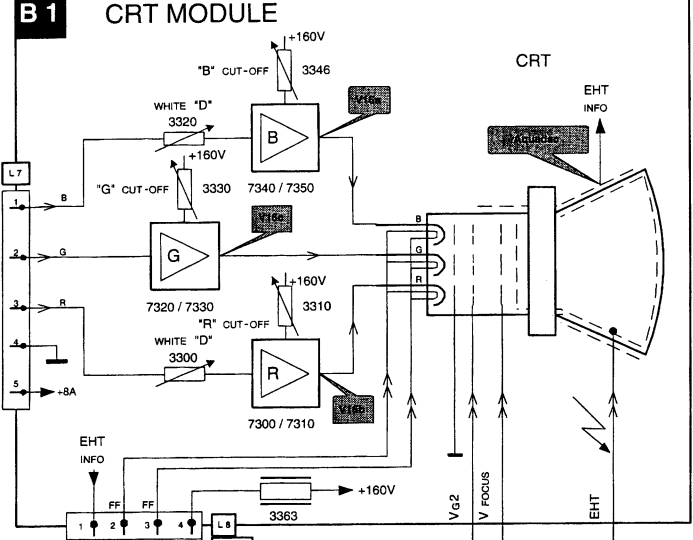
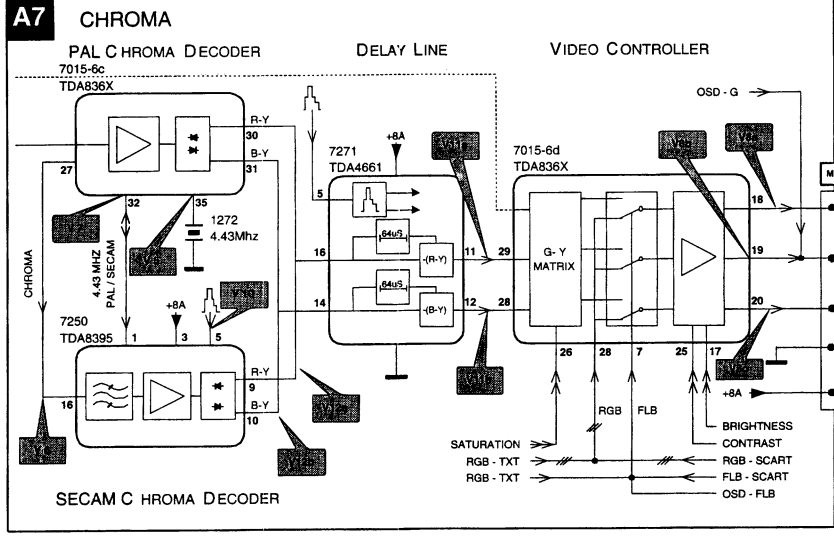
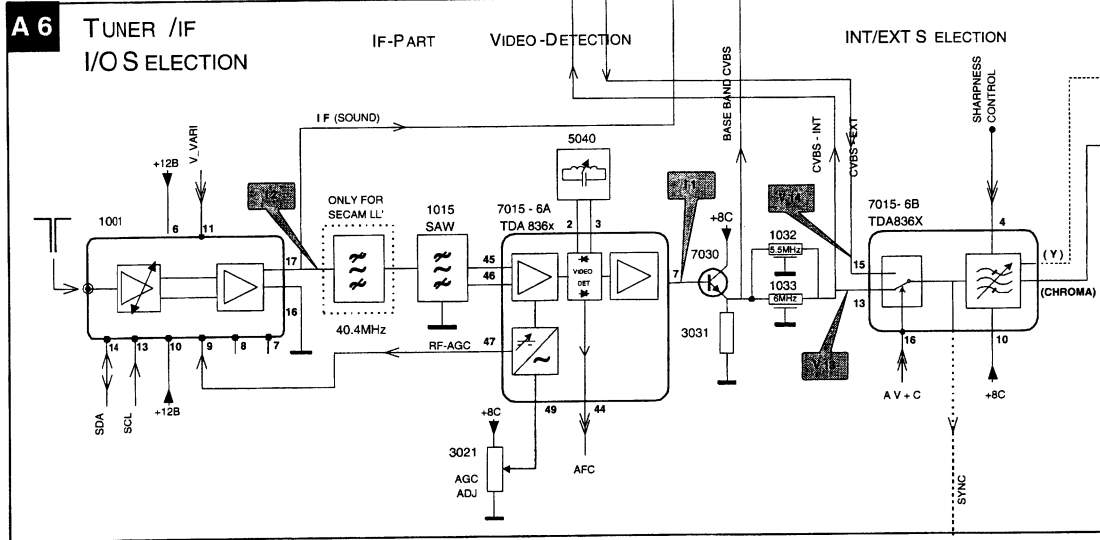
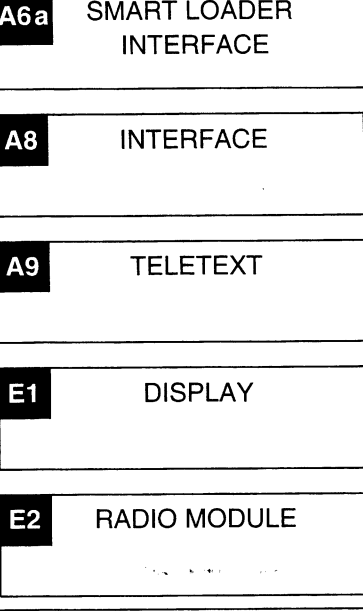
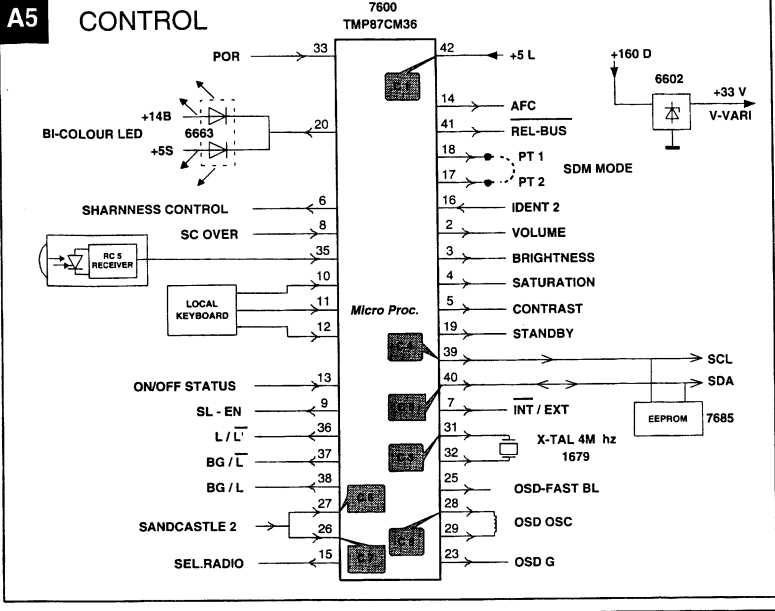
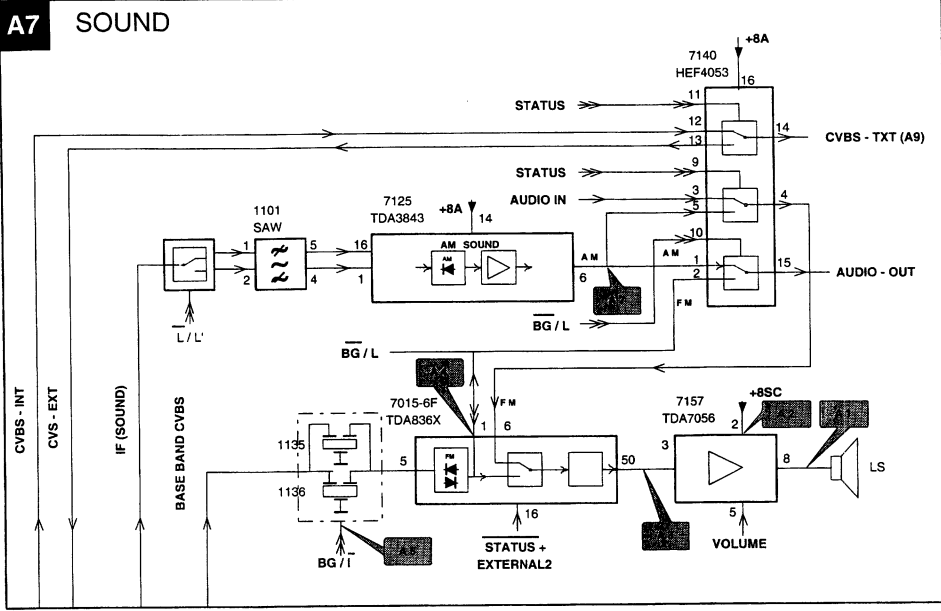
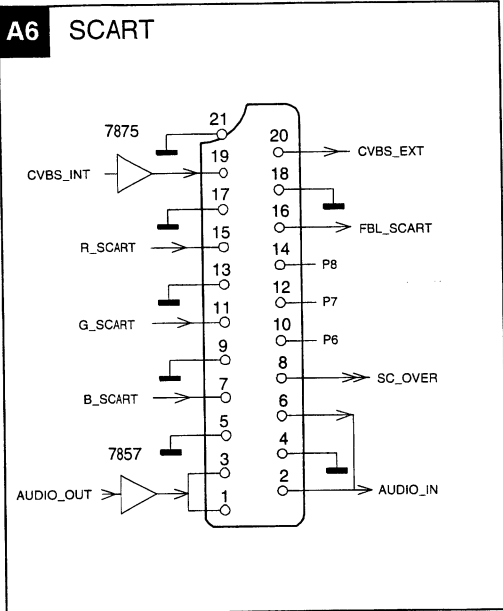


Fig. 4.1



2. Test points

*	P1-P2-P3, etc:	Test points for the power supply
*	L1-L2-L3, etc:	Test points for the line drive and line output circuitry
*	F1-F2-F3, etc:	Test points for the frame drive and frame output circuitry
*	S1-S2-S3, etc:	Test points for the synchronisation circuitry
*	V1-V2-V3, etc:	Test points for the video processing circuitry
*	A1-A2-A3, etc:	Test points for the audio processing circuitry
*	C1-C2-C3, etc:	Test points for the control circuitry
*	T1-T2-T3, etc:	Test points for the teletext processing circuitry

3. Service default-alignment mode (SDAM)

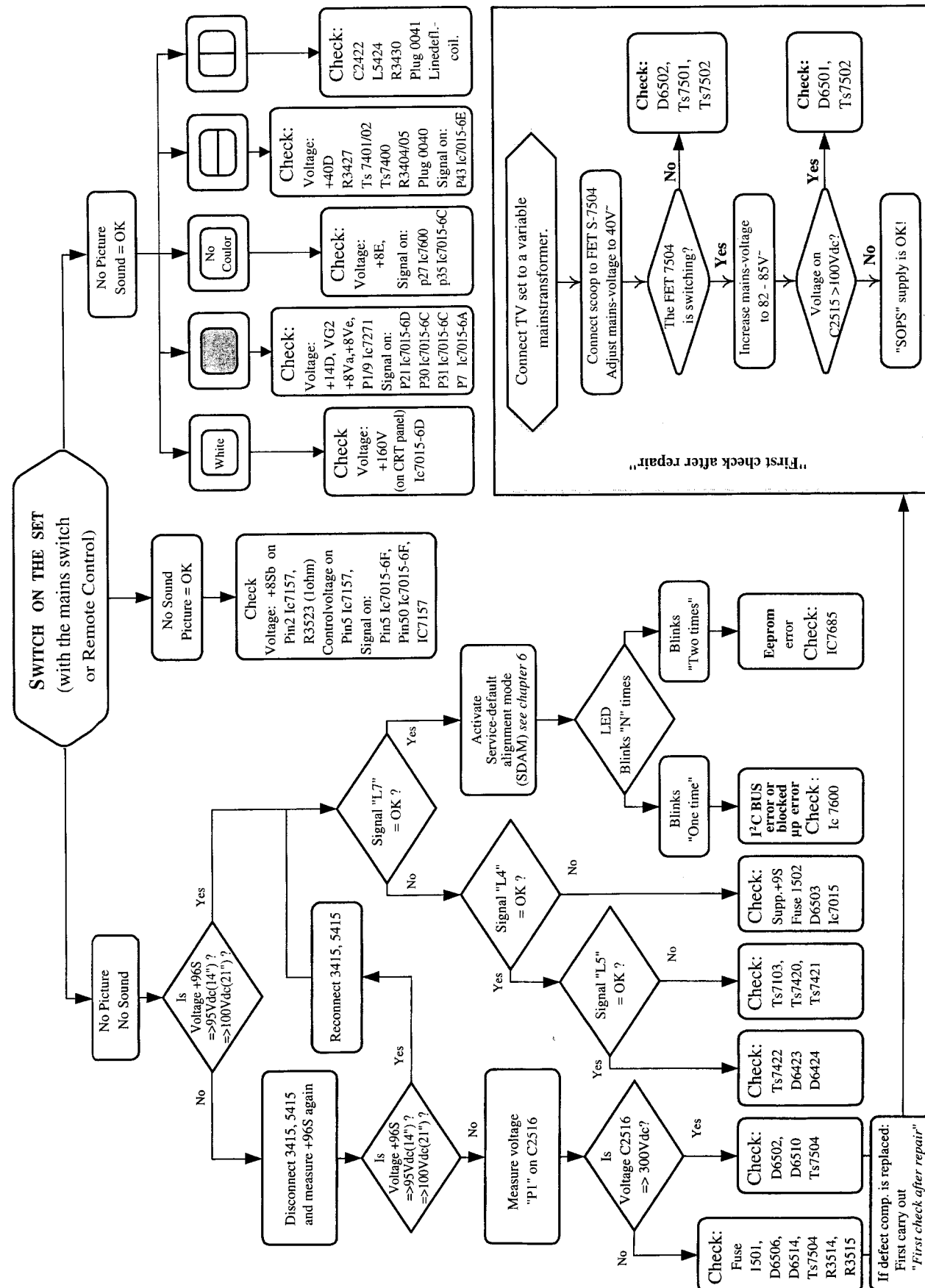
1. By short-circuiting the service pins PT1 and PT2 of the microcomputer (pin 14 of IC7600) while pressing the mains-switch.
2. From normal operation mode by pressing the button "DEFAULT" or "ALIGN" on the DST (Dealer Service Tool) RC7150.

Error code history →

0 0 0 0 0	means no error codes present in the buffer.
3 0 0 0 0	means one error code present in the buffer; error code 3.
2 3 0 0 0	means two error codes present in the buffer; last detected error code is error code 2, previous detected error code is error code 3.

Diagnose 1 is the most actual error. So the left position of the error-buffer. Diagnose 5 displays the most right position of the error-buffer. If there is an error on the selected position the led will blink twice the error code. The error code on the DST has to be ignored. Diagnose 1..5 is an powerful tool to read out the error-buffer when there is no picture.

Fig. 6.1



Repair facilities

Mapping main chassis

4. Option setting

All option setting are done in the normal menus. These menus can be selected by selecting the maximum TV-channel followed by pushing the volume/program selection button and at the same time pressing the volume-minus button for more than four seconds. With cursor up/down one of the items can be selected. With cursor right/left the items can be changed. New option settings are activated immediately. The following options can be chosen:

System	SINGLE	For a BG,DK or BG/DK set.
	MULTI F	For a BG+L+I set.
	UHF	For a I, UHF only set.
Teletext	YES/NO	Teletext can be selected yes or no.
Clock	YES/NO	Clock can be selected yes or no.
Radio	INT	To select internal radio tuner.
	EXT	This means that the radio is external. In this way TV-presets could be used as radio. The installation of these kind of programs is the same as for TV programmes. Radio channels can be modulated by the system installer on TV frequencies.
	NO	No radio available.

5. Option code

The option code is built up with 8 bits. The following table explains which option influences which bit.

BIT	Description
0 (LSB)	Not used
1	Interface system 0=non system 1=system
2	Radio internal 1=radio present
3	Not used
4	Clock 1=clock present
5	Teletext 1=txt present
6	Tv-system
7 (MSB)	Tv-system

Fig. 6.2

Tv-system (bit 7 and bit 6)

00 = single PAL
01 = PAL I
10 = not used
11 = MULTI-F

"OSD error number" (Service Menu)	"LED behaviour"	Error description	Possible defective component
0	No led blinking	No error	
1	LED blinks once	General I ² C bus	
2	LED blinks twice times	Eeprom error	IC7685
3	LED blinks three times	TXT-error	IC7700 / 7990 / wrong option
4	LED blinks four times	PLL-tuner error	Item 1001 / wrong option
5	LED blinks five times	Radio-module error	IC7904 / item 1910 / wrong option
6	LED blinks six times	Display error	IC7951

Fig. 6.3

Example: option code F4 (hexadecimal presented) means a full multi set non system with teletext, clock and internal radio. F4 is in binair 1111 0100.

6. Error messages

The microcomputer also detects errors in circuits connected to the I²C (Inter IC) bus. These error messages are communicated via OSD (On Screen Display) and a flashing LED in the service default-alignment mode. (error code history buffer):

- In normal operation:
In normal operation no errors are indicated.
- In the service default-alignment mode:
In the service default-alignment mode both the "OSD error code" and the "LED error" indication will display the present detected error twice.

7. Hotel mode

7.1 Hotel-mode "on"

To enter to hotel mode a setting must be changed in the installation menu.

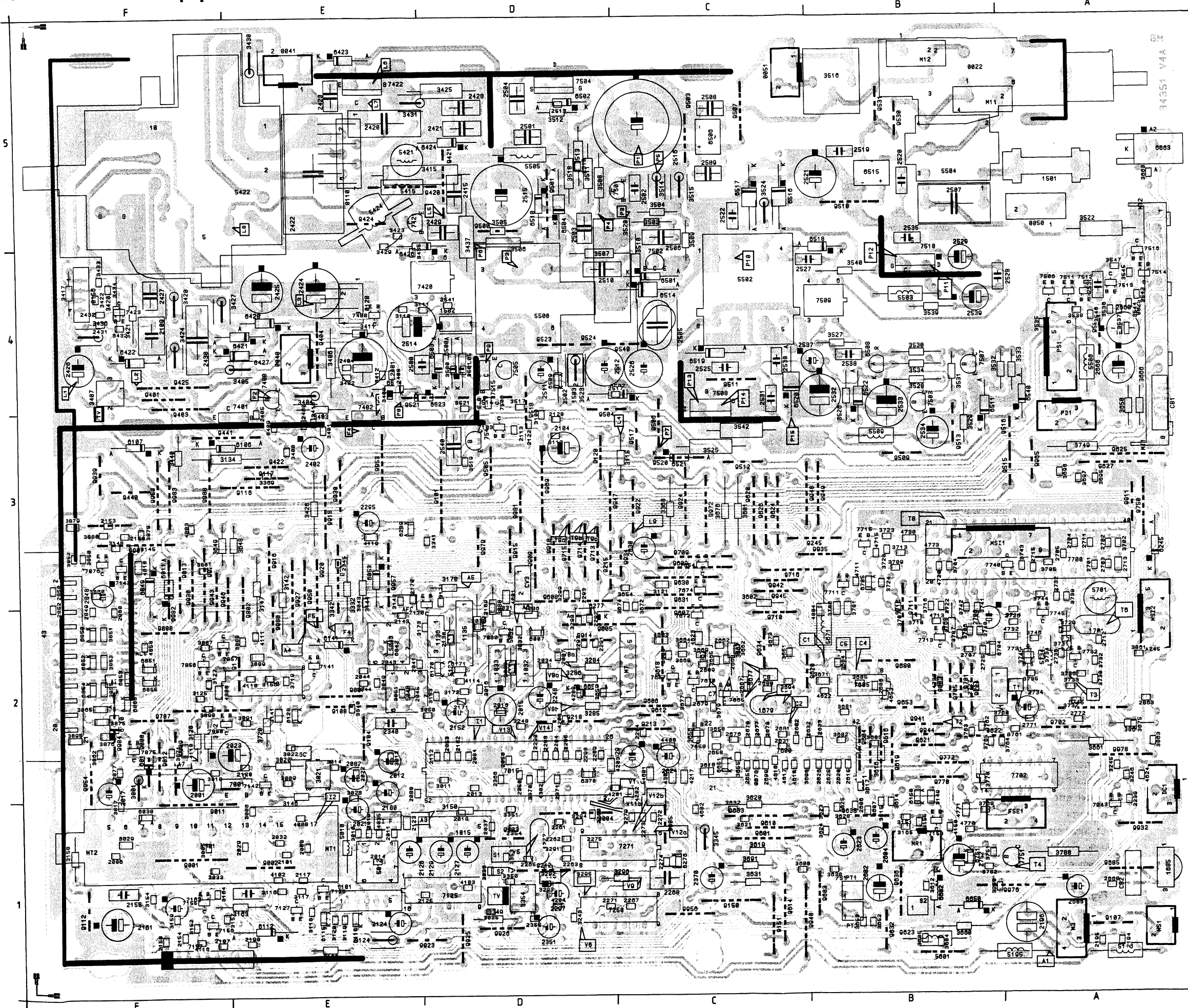
7.2 Fuction of the hotel mode

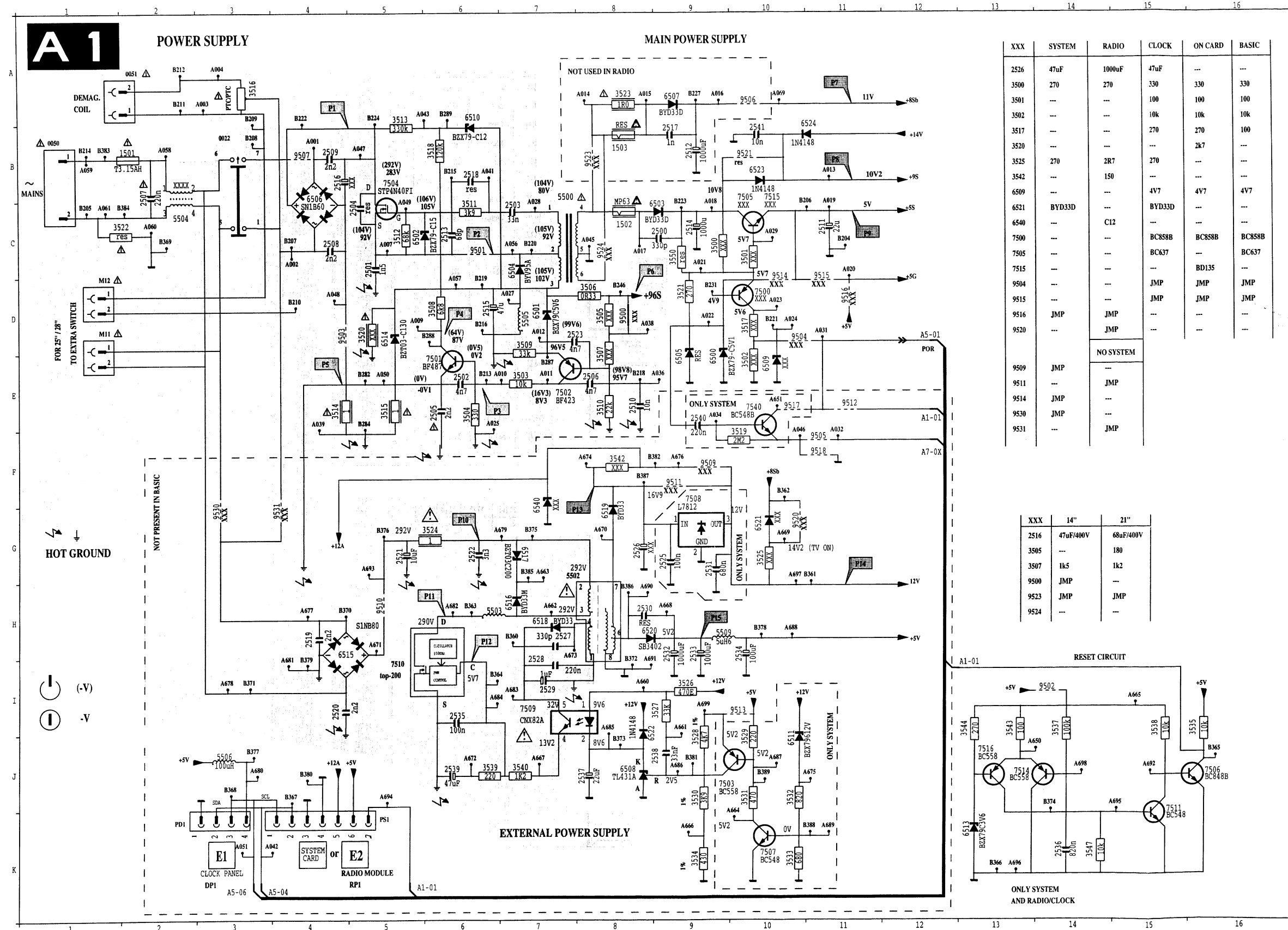
- Volume cannot be increased above the maximum level installed.
- Store open/close is ignored, message "LOCKED" is shown.
- Local keys are blocked. If the blocking option is set, a message "LOCKED" is shown when a local key is pressed.
- All protected programs cannot be selected. To free protected programmes the remote control key "PIP on/off" must be pressed or the relevant menu item must be changed. This key works as a toggle function.

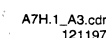
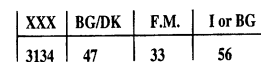
7.3 Hotel-mode "off"

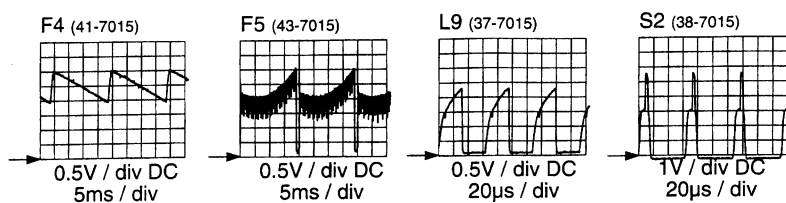
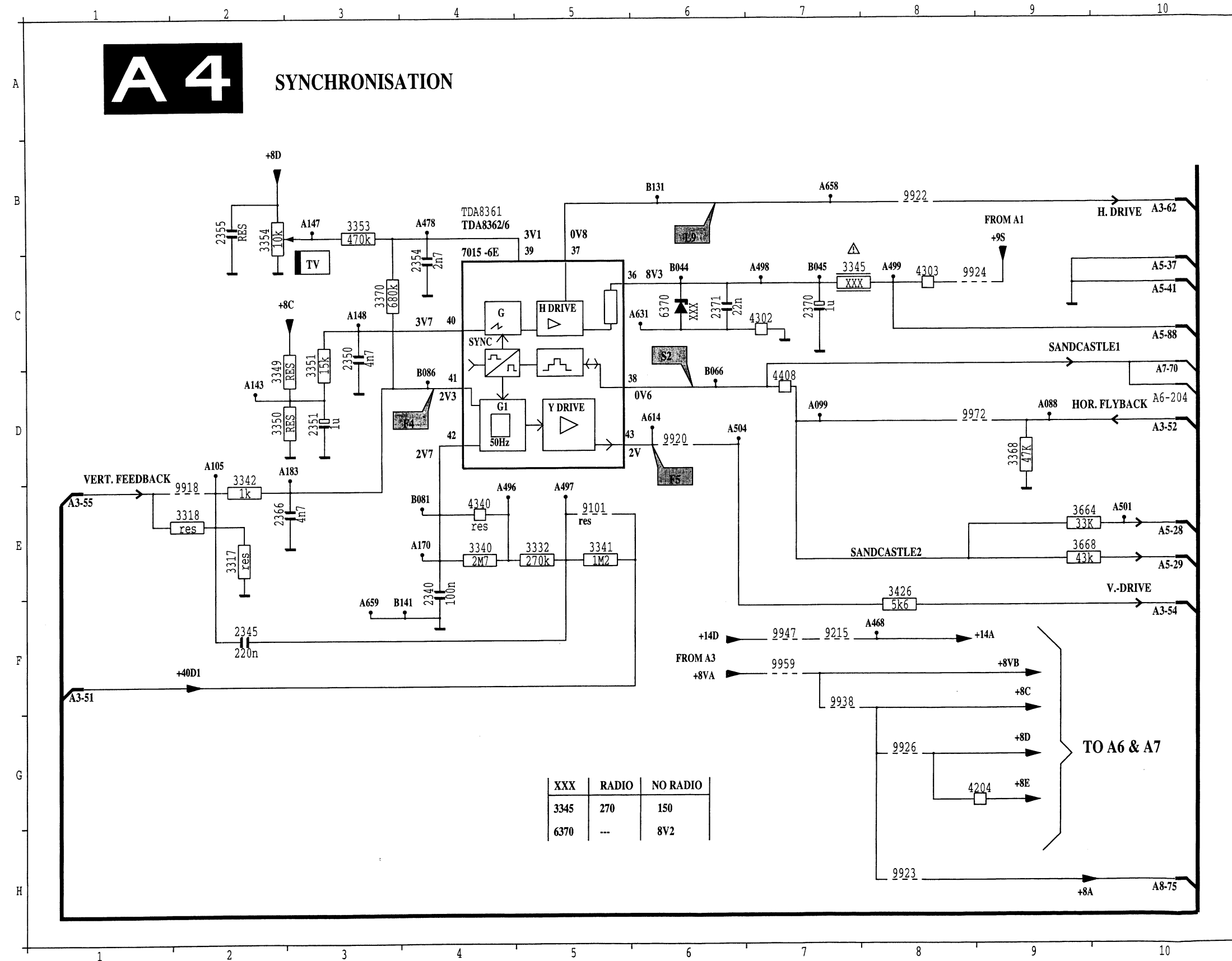
To leave to hotel mode a setting must be changed in the installation menu. Same setting as in the Hotel-mode "on".

0022 B	2263 D1*	2615 B2*	3121 C3*	3436 F4	3672 C2*	4003 F3*	6420 E4	7665 C2*	9616 B2	CB2 A1
0025 A4	2265 D1*	2620 B2*	3124 E1	3437 D4	3673 C2*	4006 D2*	6421 E4	7670 C2*	9618 C2	CV1 A2
0040 E4	2267 C1*	2623 B1*	3125 F2*	3440 F3	3674 C2*	4008 E1*	6422 F4	7672 C2*	9619 B2	CV3 D3
0041 E5	2268 C1*	2624 C2	3126 F2	3500 D4*	3675 A2*	4035 E1*	6423 E5	7674 C3*	9620 B2	DC1 A1
0043 F2	2271 C1*	2625 B2*	3127 E2*	3501 D4*	3676 C3	4102 E1*	6424 D5	7685 B2	9621 B2	FSE1 A1
0050 A5	2272 C1*	2626 B2*	3134 E3	3502 D4	3677 C2*	4103 D1*	6427 E4	7700 A3	9622 A2	M11 A5
0051 B5	2273 C1*	2629 C2	3141 E2*	3503 C4	3678 C2*	4110 E2*	6500 D4	7711 B3*	9623 B1	M12 B5
0110 E5	2274 C1*	2630 C3	3142 E3	3504 C5	3679 C2*	4111 E2*	6501 C4	7713 B2*	9624 C3	M3 A1
0120 E4	2275 D1*	2631 C2*	3143 E3*	3505 D4	3680 C2*	4114 D2*	6502 D5	7715 B3*	9625 A3	M7 C2
0156 F4	2279 C1*	2632 B2*	3144 E3	3506 D4	3681 B2*	4116 F1*	6503 D4	7731 A2*	9626 C3	ML1 F3
1001 F1	2280 D1*	2633 B2*	3145 F3*	3507 C4	3682 B2*	4118 F2*	6504 D5	7732 A2*	9628 C3	ML2 F3
1015 D1	2283 D2*	2651 C2*	3146 E2	3508 C5	3683 B2*	4119 E3*	6505 D4	7740 A3*	9630 C3	ML3 F3
1032 D2	2284 D2*	2658 C2*	3147 E3	3509 C4	3684 B2*	4150 B1*	6506 C5	7745 A2*	9631 C3	ML4 F2
1033 D2	2285 D2*	2660 A1*	3148 F3*	3510 C4	3685 B2*	4201 C2*	6507 C4	7751 A1	9632 B1	ML5 F2
1101 E1	2289 C2*	2662 C2*	3149 B1*	3511 D5	3691 C1	4202 C2*	6508 B4	7755 A1	9633 B1	MR1 B1
1135 D2	2290 D2*	2663 C2*	3150 D1	3512 D5	3694 C2*	4203 C2*	6509 D4*	7856 F2*	9634 C1	MS1 A1
1136 D2	2291 C2*	2666 A4	3151 B1*	3513 D5	3695 A3*	4204 D1*	6510 D5	7857 E2*	9634 C2	MS1 A3
1272 D1	2292 D2*	2667 C2*	3152 F1*	3514 C5	3696 A3*	4208 D2*	6511 A3	7858 E2*	9635 B1	MS2 A2
1501 A5	2293 D3*	2668 A4	3153 D2*	3515 C5	3697 A3*	4209 D2*	6514 C4	7876 F3*	9636 B1	PD1 A3
1502 D4	2294 C2*	2669 C2*	3154 F1*	3516 B5	3698 B2*	4217 C2*	6515 B5	9000 F2	9653 B2	PS1 A4
1503 D4	2295 E3	2670 C2*	3155 B1*	3517 D4*	3702 A3*	4302 D2*	6516 C5	9001 F1	9685 A1	PT2 B1
1679 C2	2297 D1	2676 C2*	3156 E2*	3518 D5	3704 B3*	4303 C2*	6517 C5	9002 E1	9701 B2	S2 B1
1685 A1	2298 D2*	2677 C2*	3157 E1*	3519 D3*	3705 A3*	4408 C2*	6518 B4	9003 D1	9702 A2	*= Chip component
1701 A2	2340 E2	2678 C2*	3158 F1	3520 C4	3706 B2*	4601 C2*	6519 C4	9004 D1	9704 B2	
2001 F2	2345 E3*	2679 C2*	3159 F1*	3521 D4*	3707 B2*	4602 C1*	6520 B4	9005 C1	9705 B2	
2006 F1*	2350 D2*	2680 C2*	3163 E1	3522 A4	3709 B3*	4603 C2*	6521 C3	9007 E2	9707 F2	
2007 D2*	2351 D1	2681 C2*	3164 E1*	3523 D4	3713 B3*	4616 B2*	6522 B4	9008 F2	9708 E2	
2008 E1*	2354 D1*	2682 B2*	3165 B1*	3524 C4	3714 A2*	4617 C2*	6523 D4	9009 F2	9709 C3	
2010 E1*	2355 D1*	2685 A1	3169 D2	3525 C3	3716 B2*	4618 C2*	6524 E4	9011 F1	9710 C2	
2011 E1*	2366 D2*	2686 B2*	3170 D3	3526 B4	3718 B2*	4622 B2*	6540 A4	9012 F2	9711 B2	
2012 E2	2370 C1	2689 C2*	3171 D3*	3527 B4	3719 E2*	4623 C2*	6602 B1	9013 F3	9712 B2	
2013 D2*	2371 D2*	2701 A3*	3172 D2*	3528 B4	3720 E2	4624 A2*	6650 B1	9101 D3	9713 C3	
2014 E1*	2400 E3*	2702 A3*	3173 D2*	3529 B3	3722 B2*	4653 B2*	6651 C2*	9104 E2	9714 D3	
2015 D2	2401 E4	2703 A3*	3198 E1	3530 B4	3723 B3*	4711 B3*	6658 D2	9107 A1	9715 D3	
2016 D2*	2402 E3	2704 A3*	3243 D1*	3531 B4	3724 B3*	4713 B2*	6704 A2*	9108 E2	9716 B3	
2017 F2	2404 E4*	2705 A3*	3245 A2*	3532 A4	3728 B3*	4715 B3*	6705 B3*	9111 E2	9745 A2	
2018 D1*	2405 E3*	2706 A2	3246 A2*	3533 A4	3729 A2*	4720 B3*	6751 B1*	9112 F1	9750 A3	
2022 E2*	2408 E4*	2707 B2*	3248 D2*	3534 B4	3731 A2*	4730 B3*	6849 F3	9116 E3	9770 B2	
2023 E2	2415 D5	2711 A3*	3259 A1*	3535 A4*	3732 A2*	4732 A2*	6850 F2*	9117 E3	9772 B2	
2025 E1	2420 E5	2712 A2*	3284 D2	3536 A4*	3733 A2*	4738 B2*	6851 F2*	9120 C3	9802 E3	
2029 E1*	2421 D5	2713 A3*	3285 D2	3537 A4*	3734 A2*	4770 B1*	6852 F2*	9150 C1	9803 B2	
2030 D2*	2422 E5	2715 A3*	3286 D2	3538 A4*	3735 A2*	4771 B1*	6853 F2*	9151 C1	9909 D3	
2031 E1	2423 E5	2725 A2*	3291 D1*	3539 B4	3736 A2*	4773 B3*	6854 F2*	9212 D1	9910 D3	
2032 E1*	2424 E4	2726 A2*	3292 D1*	3540 B4	3737 A2*	4804 B2*	6855 F2*	9213 C2	9911 A3	
2033 E1*	2425 E4	2727 B2*	3293 D1*	3542 C3	3738 A2*	4808 E2*	6865 F2*	9215 C3	9914 D2	
2034 D2*	2426 F4	2732 A3*	3294 D1*	3543 A4*	3739 A3*	4810 F3*	7001 E2	9218 D2	9915 D3	
2037 D1*	2427 F4	2734 A2	3295 D1*	3544 A4*	3740 B2*	4853 F2*	7015 D2	9245 B3	9916 E3	
2041 D2*	2428 D5	2736 A2*	3296 C1	3545 A4*	3741 B2*	5010 E1	7030 D2*	9401 F4	9918 E3	
2043 E2*	2429 D4	2752 B1	3297 D2*	3546 A4*	3742 E2*	5012 E1	7103 D3*	9403 F4	9920 E3	
2044 E2*	2430 F4	2771 A2*	3298 D2*	3547 A4*	3743 A3*	5032 D2	7125 D1	9404 E4	9922 C3	
2045 D2*	2431 F4*	2772 A2*	3299 D3*	3601 C3	3744 A3*	5040 D2	7126 E1*	9420 D5	9923 D1	
2050 D2*	2432 F4*	2848 F3	3332 E3	3602 C2	3745 A2	5043 E2	7127 E1*	9421 D5	9924 C3	
2053 D2*	2500 D4	2849 F2*	3340 E2*	3604 B1*	3746 A2*	5130 D2	7140 E2	9422 E3	9925 D1	
2080 D2*	2501 D5	2850 F3*	3341 D3*	3605 B1*	3749 A3	5195 A1	7141 E2*	9424 E4	9926 D1	
2082 E2	2502 C5	2852 F2*	3342 E3	3607 B1*	3751 A1*	5196 A1	7142 E2*	9425 F4	9927 E3	
2084 D2*	2503 D4	2860 F2*	3345 C1	3608 B1*	3752 A1*	5415 D5	7143 F3*	9440 F3	9928 F3	
2101 E1*	2504 D5	2863 A2*	3349 D1	3612 B1*	3760 A2*	5421 D5	7150 B1*	9441 E3	9930 E3	
2104 D3	2505 C4	2877 F2*	3350 D1*	3614 B1*	3761 A2*	5422 E5	7155 F1*	9500 D4	9932 A1	
2109 F4	2506 C4	3001 F2	3351 D1*	3615 B1*	3762 B2*	5424 E4	7156 E1*	9501 D5	9934 C3	
2112 D2*	2507 B5	3005 F1*	3353 D1*	3616 B2	3763 B2*	5500 D4	7157 F1	9502 A4	9935 B3	
2113 D3*	2508 C5	3008 E1*	3354 D1	3617 B2*	3764 A2*	5502 C4	7170 D2*	9503 C5	9937 F3	
2117 E1*	2509 C5	3009 E2*	3368 C3	3618 C2*	3765 A2*	5503 B4	7243 A1*	9504 C3	9938 F3	
2120 D3*	2510 C4	3010 E1*	3369 E3*	3619 C1	3768 B2	5504 B5	7250 C1	9505 D3	9939 F3	
2122 D3*	2511 D4	3011 D2*	3370 D2*	3620 C1	3769 A1*	5505 D5	7271 C1	9506 C3	9940 B1	
2123 D1*	2512 C4	3012 E2*	3400 E3*	3621 C1*	3770 B2*	5506 A4	7400 E4	9507 C5	9941 B2	
2124 E1	2513 D5*	3014 E2*	3401 E3*	3623 B1*	3781 B2*	5509 B3	7401 E3	9509 B3	9942 C3	
2125 D1*	2514 D4	3016 D2*	3402 E4*	3624 B1*	3786 B2*	5601 B1	7402 E3	9510 B5	9943 E3	
2126 D1	2515 D5	3017 F1*	3403 E4	3625 B1*	3787 B2*	5671 B2	7408 E4*	9511 C4	9944 B2	
2127 D1	2516 C5	3018 E2*	3404 E4	3628 B1*	3788 A1	5677 C2	7420 D4	9512 C3	9945 C3	
2128 E2*	2517 C4*	3020 E2	3405 E4	3630 B1*	3850 F3*	5701 A2	7421 D4	9513 B3	9946 E3	
2129 D1	2518 D5*	3021 E2	3406 E4	3631 C1	3851 F2*	5704 A2	7422 E5	9514 D4	9947 C3	
2130 D2*	2519 B5	3022 E2*	3407 F4	3632 C1*	3852 F3*	5734 A2	7423 F4*	9515 A3	9948 B3	
2143 D2*	2520 B5	3023 E1*	3408 E4*	3634 E3	3853 F2*	5999 E5	7500 D4*	9516 A3	9949 B3	
2152 D2	2521 B5	3029 F1*	3409 E3*	3648 E3	3855 F2*	6007 D2*	7501 C5	9517 C3	9950 E3	
2153 F3*	2522 C4	3030 D2	3410 E3*	3650 A3	3860 F3*	6010 F2	7502 C4	9518 D3	9953 E3	
2154 F1*	2525 C4	3031 D2*	3411 E4	3651 B2*	3861 A2*	6011 F3	7503 B4	9519 C3	9954 F2	
2155 F1	2526 C4	3032 D2*	3412 E4*	3652 B1*	3862 F2*	6030 F1*	7504 D5	9521 D4	9956 C1	
2156 F3*	2527 B4	3033 D2*	3415 D5	3653 B1*	3863 A2*	6042 E2*	7505 D4	9523 D4	9957 E3	
2158 F1*	2528 A4	3035 D1*	3417 F4	3654 C3*	3864 A2	6053 E3	7506 A4*	9524 D4	9959 F3	
2161 F1	2529 B4	3036 D1*	3420 F4	3655 C2*	3865 F2*	6106 E3	7507 B4	9530 B5	9965 A3	
2162 D2*	2530 C4	3043 E3*	3421 F4	3656 C2	3871 F2*	6107 F3	7508 C4	9531 B5	9967 F3	
2163 F1	2531 C4	3044 E2*	3422 F4*	3658 C2*	3875 F2*	6110 F2	7509 B4	9540 C4	9969 D3	
2169 D2*	2532 B4	3049 E2*	3423 E4*	3659 C2*	3876 F2*	6112 E1	7510 B4	9601 C1	9972 C3	
2170 D3*	2533 B3	3050 D2*	3424 F4	3660 B1	3878 F3*	6115 E1*	7511 A4*	9603 B1	9976 A1	
2171 D2*	2534 B3	3051 D2*	3425 D5	3661 A2	3879 F3*	6116 E1*	7512 E2*	9604 B2	9978 A2	
2180 E2	2535 B4	3100 D3*								









A7H.1_A4.cdr
181197

A5

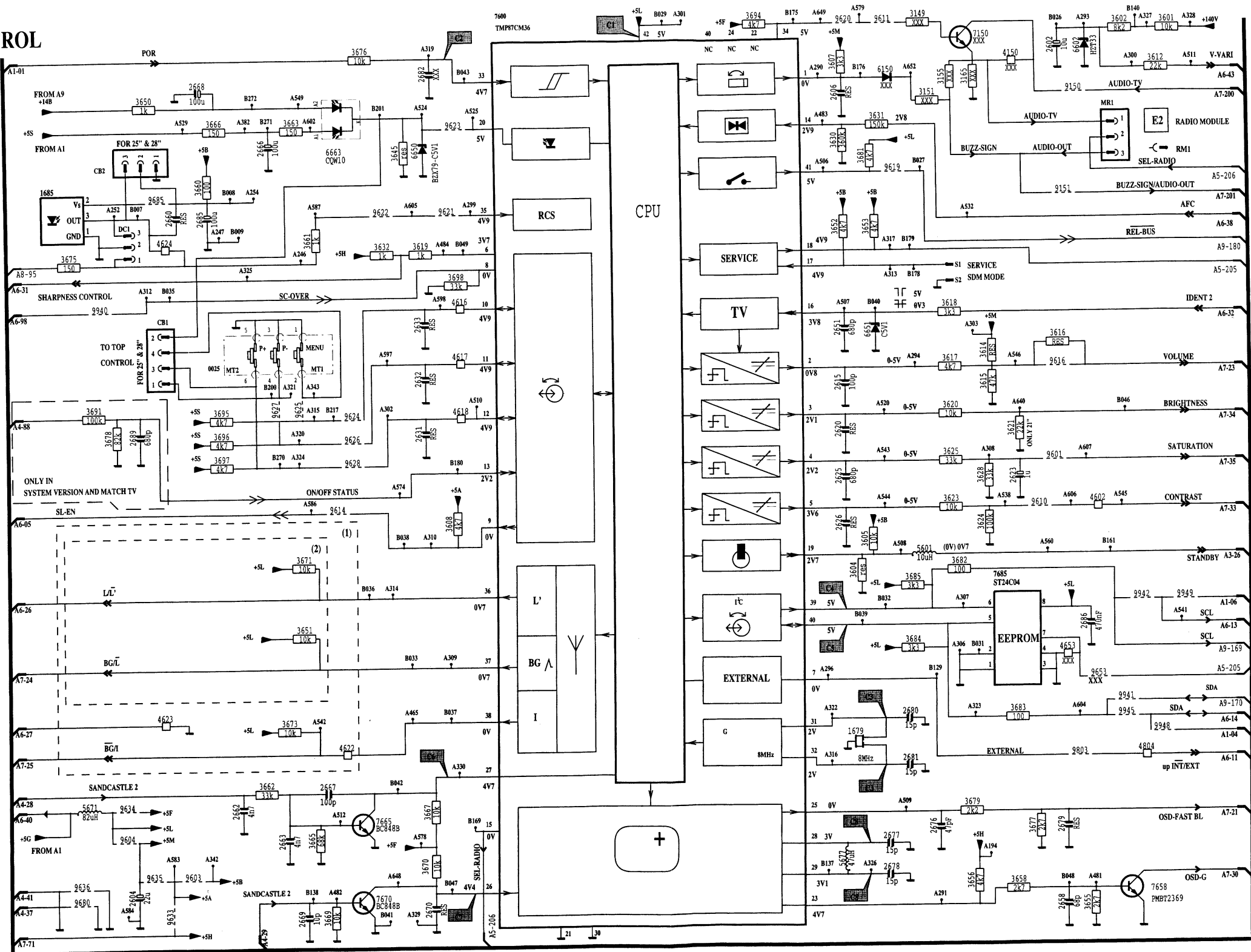
CONTROL

(1) ONLY FOR MULTI PAL/SECAM BG/L/L/L
(2) ONLY FOR PAL/SECAM BG/L/L/L

XXX	ON CARD or NO SYSTEM	SYSTEM
2682	100p	220m

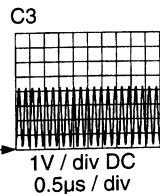
XXX	CLOCK	NO CLOCK	ON CARD
3149	22k	---	22k
3151	3k3	---	3k3
3165	10k	---	10k
4150	---	YES	---
6150	LL4148	---	LL4148
7150	BC848B	---	BC848B
3155	RADIO	NO RADIO	3k3

XXX	7685
4653	YES
9653	NOT

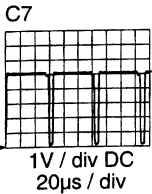
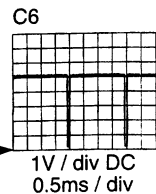


0025 5 9620 8
1292 5 9621 8
1885 5 9622 8
2602 5 9623 8
2604 5 9624 8
2605 5 9625 8
2606 5 9626 8
2607 5 9627 8
2608 5 9628 8
2609 5 9629 8
2610 5 9630 8
2611 5 9631 8
2612 5 9632 8
2613 5 9633 8
2614 5 9634 8
2615 5 9635 8
2616 5 9636 8
2617 5 9637 8
2618 5 9638 8
2619 5 9639 8
2620 5 9640 8
2621 5 9641 8
2622 5 9642 8
2623 5 9643 8
2624 5 9644 8
2625 5 9645 8
2626 5 9646 8
2627 5 9647 8
2628 5 9648 8
2629 5 9649 8
2630 5 9650 8
2631 5 9651 8
2632 5 9652 8
2633 5 9653 8
2634 5 9654 8
2635 5 9655 8
2636 5 9656 8
2637 5 9657 8
2638 5 9658 8
2639 5 9659 8
2640 5 9660 8
2641 5 9661 8
2642 5 9662 8
2643 5 9663 8
2644 5 9664 8
2645 5 9665 8
2646 5 9666 8
2647 5 9667 8
2648 5 9668 8
2649 5 9669 8
2650 5 9670 8
2651 5 9671 8
2652 5 9672 8
2653 5 9673 8
2654 5 9674 8
2655 5 9675 8
2656 5 9676 8
2657 5 9677 8
2658 5 9678 8
2659 5 9679 8
2660 5 9680 8
2661 5 9681 8
2662 5 9682 8
2663 5 9683 8
2664 5 9684 8
2665 5 9685 8
2666 5 9686 8
2667 5 9687 8
2668 5 9688 8
2669 5 9689 8
2670 5 9690 8
2671 5 9691 8
2672 5 9692 8
2673 5 9693 8
2674 5 9694 8
2675 5 9695 8
2676 5 9696 8
2677 5 9697 8
2678 5 9698 8
2679 5 9699 8
2680 5 9700 8
2681 5 9701 8
2682 5 9702 8
2683 5 9703 8
2684 5 9704 8
2685 5 9705 8
2686 5 9706 8
2687 5 9707 8
2688 5 9708 8
2689 5 9709 8
2690 5 9710 8
2691 5 9711 8
2692 5 9712 8
2693 5 9713 8
2694 5 9714 8
2695 5 9715 8
2696 5 9716 8
2697 5 9717 8
2698 5 9718 8
2699 5 9719 8
2700 5 9720 8
2701 5 9721 8
2702 5 9722 8
2703 5 9723 8
2704 5 9724 8
2705 5 9725 8
2706 5 9726 8
2707 5 9727 8
2708 5 9728 8
2709 5 9729 8
2710 5 9730 8
2711 5 9731 8
2712 5 9732 8
2713 5 9733 8
2714 5 9734 8
2715 5 9735 8
2716 5 9736 8
2717 5 9737 8
2718 5 9738 8
2719 5 9739 8
2720 5 9740 8
2721 5 9741 8
2722 5 9742 8
2723 5 9743 8
2724 5 9744 8
2725 5 9745 8
2726 5 9746 8
2727 5 9747 8
2728 5 9748 8
2729 5 9749 8
2730 5 9750 8
2731 5 9751 8
2732 5 9752 8
2733 5 9753 8
2734 5 9754 8
2735 5 9755 8
2736 5 9756 8
2737 5 9757 8
2738 5 9758 8
2739 5 9759 8
2740 5 9760 8
2741 5 9761 8
2742 5 9762 8
2743 5 9763 8
2744 5 9764 8
2745 5 9765 8
2746 5 9766 8
2747 5 9767 8
2748 5 9768 8
2749 5 9769 8
2750 5 9770 8
2751 5 9771 8
2752 5 9772 8
2753 5 9773 8
2754 5 9774 8
2755 5 9775 8
2756 5 9776 8
2757 5 9777 8
2758 5 9778 8
2759 5 9779 8
2760 5 9780 8
2761 5 9781 8
2762 5 9782 8
2763 5 9783 8
2764 5 9784 8
2765 5 9785 8
2766 5 9786 8
2767 5 9787 8
2768 5 9788 8
2769 5 9789 8
2770 5 9790 8
2771 5 9791 8
2772 5 9792 8
2773 5 9793 8
2774 5 9794 8
2775 5 9795 8
2776 5 9796 8
2777 5 9797 8
2778 5 9798 8
2779 5 9799 8
2780 5 9800 8
2781 5 9801 8
2782 5 9802 8
2783 5 9803 8
2784 5 9804 8
2785 5 9805 8
2786 5 9806 8
2787 5 9807 8
2788 5 9808 8
2789 5 9809 8
2790 5 9810 8
2791 5 9811 8
2792 5 9812 8
2793 5 9813 8
2794 5 9814 8
2795 5 9815 8
2796 5 9816 8
2797 5 9817 8
2798 5 9818 8
2799 5 9819 8
2800 5 9820 8
2801 5 9821 8
2802 5 9822 8
2803 5 9823 8
2804 5 9824 8
2805 5 9825 8
2806 5 9826 8
2807 5 9827 8
2808 5 9828 8
2809 5 9829 8
2810 5 9830 8
2811 5 9831 8
2812 5 9832 8
2813 5 9833 8
2814 5 9834 8
2815 5 9835 8
2816 5 9836 8
2817 5 9837 8
2818 5 9838 8
2819 5 9839 8
2820 5 9840 8
2821 5 9841 8
2822 5 9842 8
2823 5 9843 8
2824 5 9844 8
2825 5 9845 8
2826 5 9846 8
2827 5 9847 8
2828 5 9848 8
2829 5 9849 8
2830 5 9850 8
2831 5 9851 8
2832 5 9852 8
2833 5 9853 8
2834 5 9854 8
2835 5 9855 8
2836 5 9856 8
2837 5 9857 8
2838 5 9858 8
2839 5 9859 8
2840 5 9860 8
2841 5 9861 8
2842 5 9862 8
2843 5 9863 8
2844 5 9864 8
2845 5 9865 8
2846 5 9866 8
2847 5 9867 8
2848 5 9868 8
2849 5 9869 8
2850 5 9870 8
2851 5 9871 8
2852 5 9872 8
2853 5 9873 8
2854 5 9874 8
2855 5 9875 8
2856 5 9876 8
2857 5 9877 8
2858 5 9878 8
2859 5 9879 8
2860 5 9880 8
2861 5 9881 8
2862 5 9882 8
2863 5 9883 8
2864 5 9884 8
2865 5 9885 8
2866 5 9886 8
2867 5 9887 8
2868 5 9888 8
2869 5 9889 8
2870 5 9890 8
2871 5 9891 8
2872 5 9892 8
2873 5 9893 8
2874 5 9894 8
2875 5 9895 8
2876 5 9896 8
2877 5 9897 8
2878 5 9898 8
2879 5 9899 8
2880 5 9900 8
2881 5 9901 8
2882 5 9902 8
2883 5 9903 8
2884 5 9904 8
2885 5 9905 8
2886 5 9906 8
2887 5 9907 8
2888 5 9908 8
2889 5 9909 8
2890 5 9910 8
2891 5 9911 8
2892 5 9912 8
2893 5 9913 8
2894 5 9914 8
2895 5 9915 8
2896 5 9916 8
2897 5 9917 8
2898 5 9918 8
2899 5 9919 8
2900 5 9920 8
2901 5 9921 8
2902 5 9922 8
2903 5 9923 8
2904 5 9924 8
2905 5 9925 8
2906 5 9926 8
2907 5 9927 8
2908 5 9928 8
2909 5 9929 8
2910 5 9930 8
2911 5 9931 8
2912 5 9932 8
2913 5 9933 8
2914 5 9934 8
2915 5 9935 8
2916 5 9936 8
2917 5 9937 8
2918 5 9938 8
2919 5 9939 8
2920 5 9940 8
2921 5 9941 8
2922 5 9942 8
2923 5 9943 8
2924 5 9944 8
2925 5 9945 8
2926 5 9946 8
2927 5 9947 8
2928 5 9948 8
2929 5 9949 8
2930 5 9950 8
2931 5 9951 8
2932 5 9952 8
2933 5 9953 8
2934 5 9954 8
2935 5 9955 8
2936 5 9956 8
2937 5 9957 8
2938 5 9958 8
2939 5 9959 8
2940 5 9960 8
2941 5 9961 8
2942 5 9962 8
2943 5 9963 8
2944 5 9964 8
2945 5 9965 8
2946 5 9966 8
2947 5 9967 8
2948 5 9968 8
2949 5 9969 8
2950 5 9970 8
2951 5 9971 8
2952 5 9972 8
2953 5 9973 8
2954 5 9974 8
2955 5 9975 8
2956 5 9976 8
2957 5 9977 8
2958 5 9978 8
2959 5 9979 8
2960 5 9980 8
2961 5 9981 8
2962 5 9982 8
2963 5 9983 8
2964 5 9984 8
2965 5 9985 8
2966 5 9986 8
2967 5 9987 8
2968 5 9988 8
2969 5 9989 8
2970 5 9990 8
2971 5 9991 8
2972 5 9992 8
2973 5 9993 8
2974 5 9994 8
2975 5 9995 8
2976 5 9996 8
2977 5 9997 8
2978 5 9998 8
2979 5 9999 8
2980 5 10000 8

C1 5V DC
C2 4V6 DC

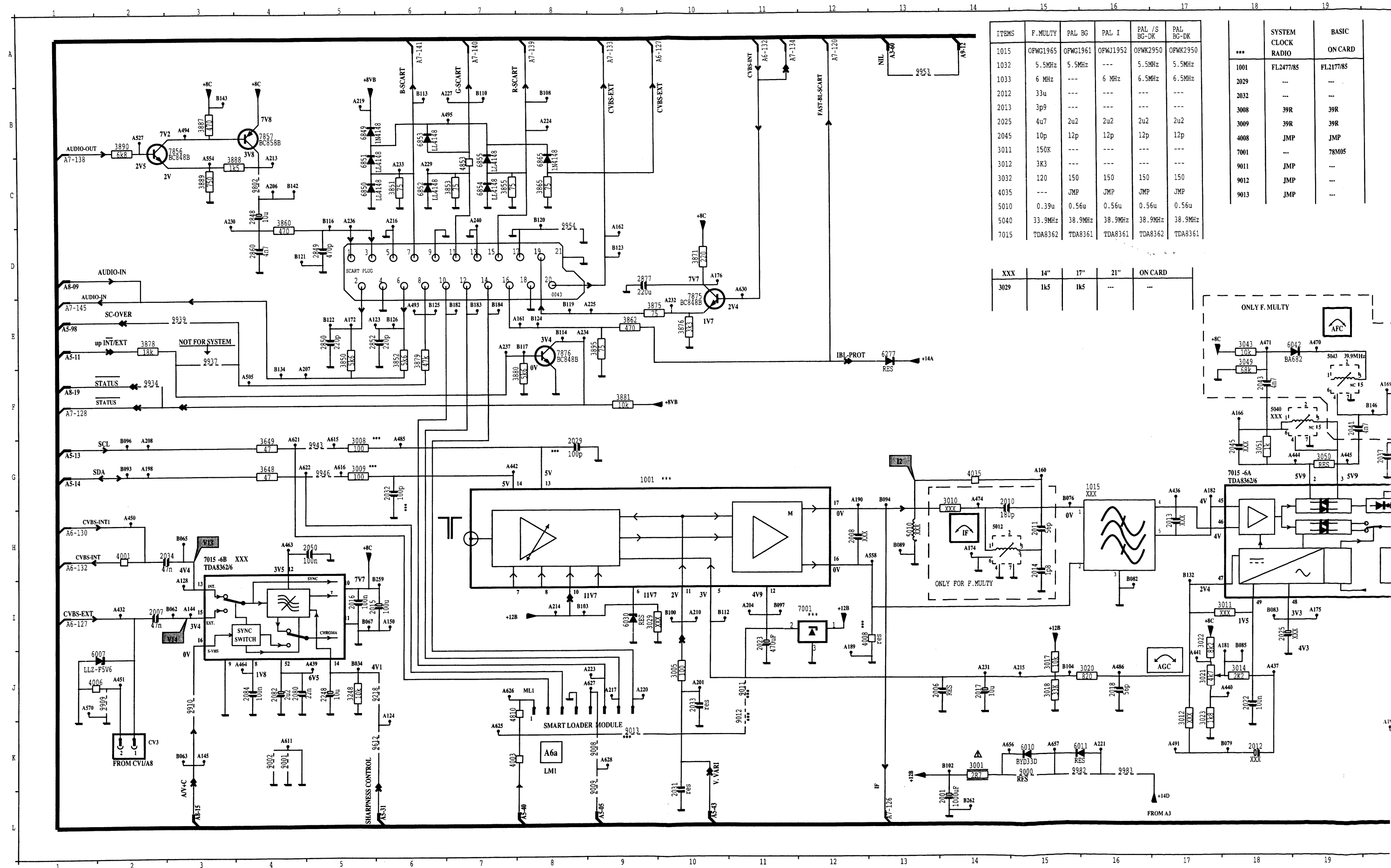


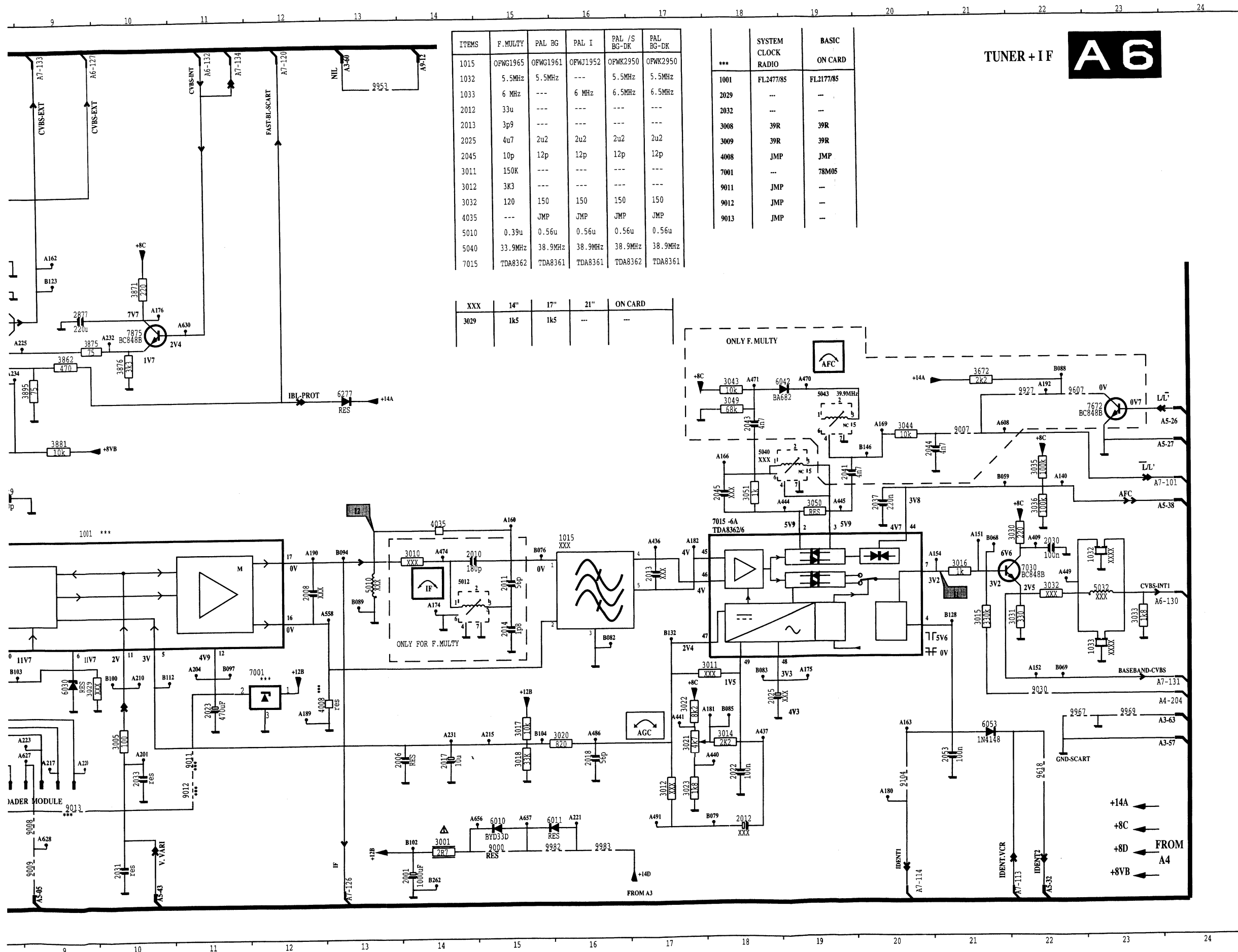
C4 5V DC
C5 5V DC



→ = 0V

A7H.1_A5.cdr
121197





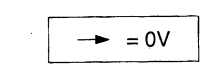
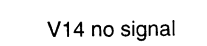
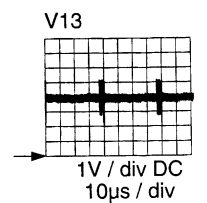
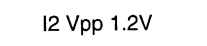
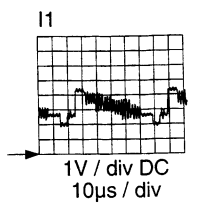
ITEMS	F. MULTY	PAL BG	PAL I	PAL / S BG-DK	PAL BG-DK
1015	OPWG1965	OPWG1961	OPWJ1952	OPWK2950	OPWK2950
1032	5.5MHz	5.5MHz	---	5.5MHz	5.5MHz
1033	6 MHz	---	6 MHz	6.5MHz	6.5MHz
2012	33u	---	---	---	---
2013	3p9	---	---	---	---
2025	4u7	2u2	2u2	2u2	2u2
2045	10p	12p	12p	12p	12p
3011	150K	---	---	---	---
3012	3K3	---	---	---	---
3032	120	150	150	150	150
4035	---	JMP	JMP	JMP	JMP
5010	0.39u	0.56u	0.56u	0.56u	0.56u
5040	33.9MHz	38.9MHz	38.9MHz	38.9MHz	38.9MHz
7015	TDA8362	TDA8361	TDA8361	TDA8362	TDA8361

XXX	14"	17"	21"	ON CARD
3029	1k5	1k5	---	---

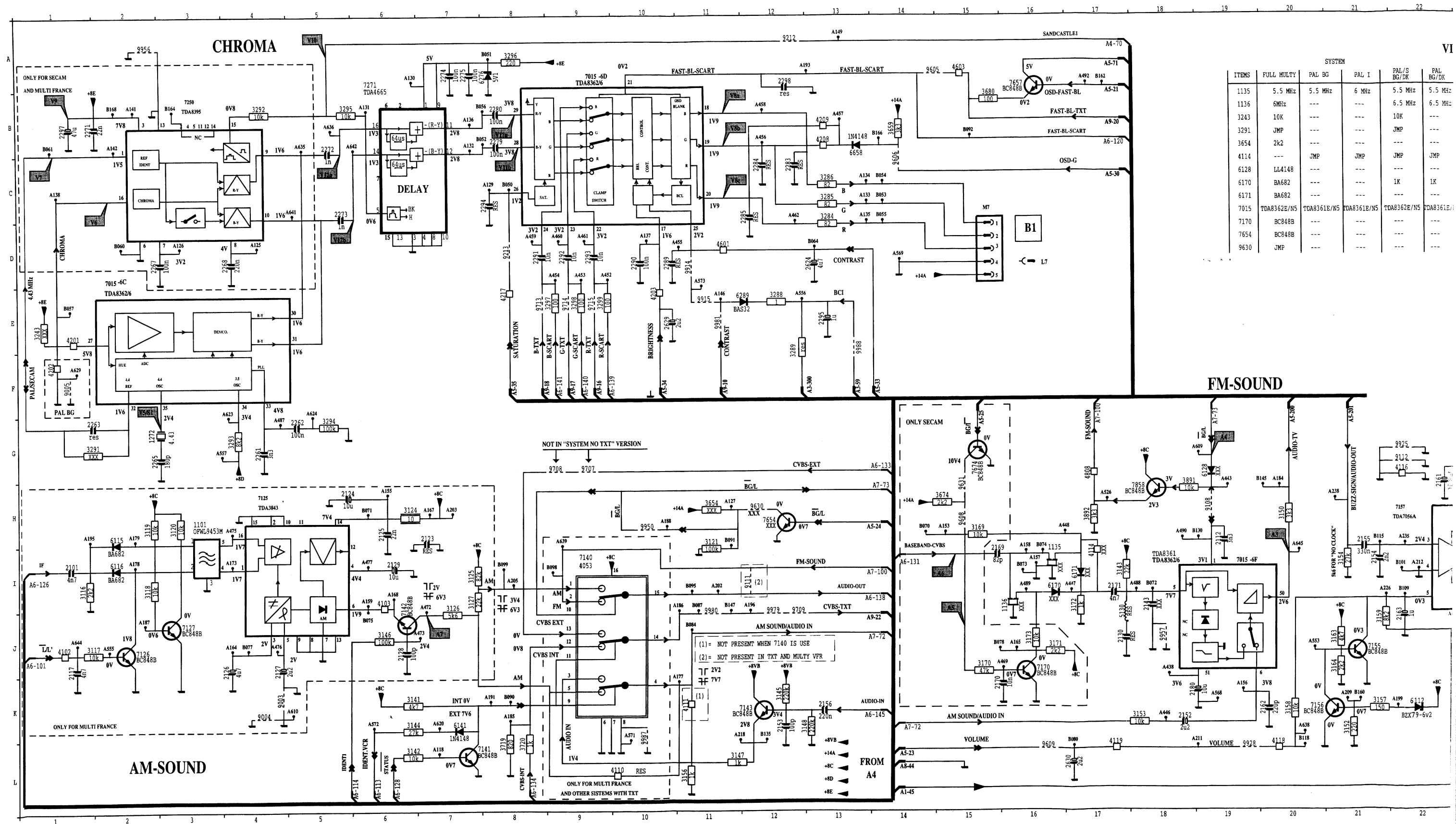
SYSTEM	CLOCK	RADIO	BASIC
1001	FL2477/85	FL2177/85	ON CARD
2029	---	---	---
2032	---	---	---
3008	39R	39R	---
3009	39R	39R	---
4008	JMP	JMP	---
7001	---	78M05	---
9011	JMP	---	---
9012	JMP	---	---
9013	JMP	---	---

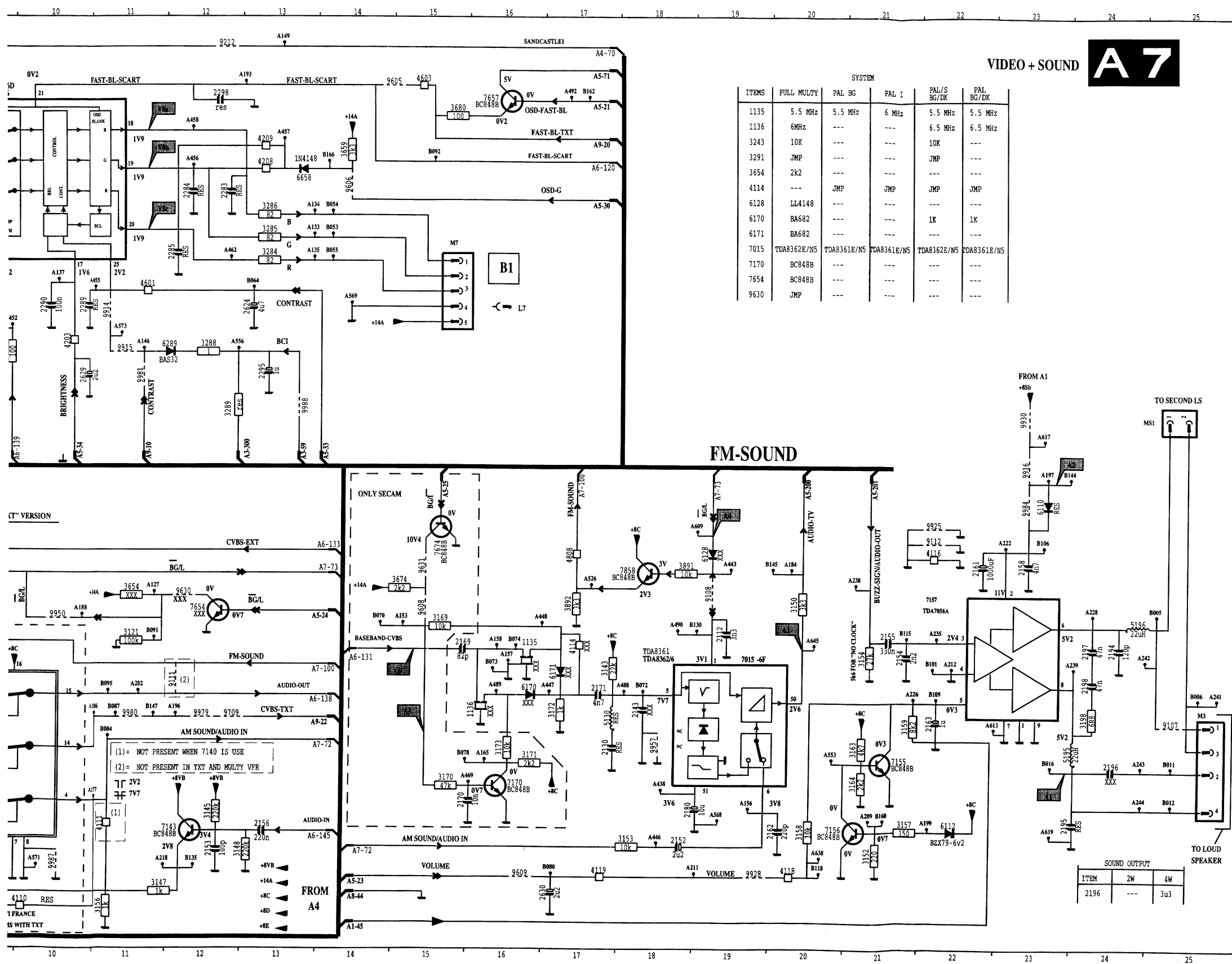
TUNER + IF **A6**

0043	D 8	7856	B 3	A486	J16
1001	G 9	7857	B 4	A491	K1
1015	G 9	7858	B 5	A492	K2
1032	H 2	7859	B 6	A493	K3
1033	I 3	9000	K15	A494	B 7
2001	L14	9001	K 4	A505	B 7
2006	J13	9002	K 4	A527	B 7
2007	I 2	9007	F21	A554	H 1
2008	H12	9008	K 9	A570	H 1
2010	H12	9009	K 9	A570	H 1
2011	H15	9011	J11	A608	F21
2012	K18	9012	J11	A611	K 4
2013	H17	9013	K 9	A615	K 4
2014	H15	9030	J22	A616	K 4
2015	I 2	9034	J20	A622	K 4
2016	I 2	9038	J 6	A626	K 4
2017	J14	9607	E22	A626	K 4
2018	J16	9612	K 6	A626	K 4
2022	J18	9618	J22	A627	K 4
2023	I11	9802	C 4	A628	K 4
2025	I18	9809	C 4	A630	D14
2029	G 8	9910	J 1	A650	K14
2030	G22	9927	E22	A657	K15
2031	L10	9934	F22	B034	J 5
2032	G 6	9937	E33	B059	G21
2033	J10	9939	E33	B062	F 1
2034	H 2	9942	G 5	B065	H 3
2037	H18	9946	G 5	B065	H 3
2041	F18	9953	A13	B067	I 5
2043	F18	9954	D 8	B068	G21
2044	F20	9967	J22	B069	I22
2045	G18	9969	J23	B076	G15
2050	H 1	9983	K15	B082	K1
2051	H 1	9983	K15	B082	K1
2080	I 4	A4-204	I24	B083	I18
2082	I 4	A6-127	I 1	B085	J18
2084	I 4	A6-127	A10	B088	E22
2248	A6-130	H 1		B089	H13
2848	A6-130	H24		B093	H13
2849	A6-130	H 1		B094	G13
2850	A6-132	A11		B096	G 2
2852	A7-101	G24		B097	I11
2860	D 4	A7-113	L22	B100	I10
2877	D 4	A7-114	L20	B102	K14
3001	K14	A7-120	A12	B104	J16
3005	L13	B104		B104	J16
3008	A7-128	F 1		B108	B 8
3009	G 5	A7-131	I24	B110	B 7
3010	G14	A7-133	A 9	B112	I10
3011	I18	A7-134	A11	B113	I10
3012	K17	A7-138	C 1	B114	I10
3014	I19	A7-139	A 8	B116	I10
3015	H21	A7-140	A 7	B117	I10
3016	H21	A7-141	A 6	B119	B08
3017	J15	A7-145	E 1	B120	C 4
3018	J15	A123	E 5	B121	C 4
3020	J11	A124	J 6	B122	C 4
3021	J11	A124	J 6	B122	C 4
3022	I17	A140	G22	B124	C 4
3023	K17	A144	I 3	B125	C 4
3029	I 9	A145	K 3	B126	C 4
3030	G22	A150	L 6	B128	H21
3031	H23	A151	G21	B132	H 1
3032	H23	A151	G21	B132	H 1
3033	H23	A151	G21	B132	H 1
3035	F22	A160	G15	B143	B 3
3036	G22	A161	B 8	B146	F20
3043	H23	A162	D 9	B182	B 7
3044	F22	A163	G20	B182	B 7
3049	F18	A169	F18	B259	I 6
3050	G18	A172	E 5	B262	L14
3051	G18	A174	H14	B-05	L 9
3248	G 4	A175	I13	B-09	D 1
3648	G 4	A176	D10	B-11	E 1
3649	G 4	A180	F20	B-11	E 1
3672	G 4	A181	I18	B-13	G 1
3851	G17	A182	G17	B-14	G 1
3852	G17	A189	J12	B-15	L 3
3853	G12	A190	G12	B-19	F 1
3854	G12	A192	E22	B-26	F 2
3855	G12	A198	E22	B-26	F 2
3862	G12	A201	I10	B-31	L 6
3863	G12	A204	I11	B-32	L22
3871	A206	C 4		B-38	G24
3876	A207	F 4		B-40	L 8
3878	A210	G 2		B-53	L10
3879	A211	C 10		B-63	G24
3880	A214	I 8		B-88	F 1
3881	A215	J15		CV3	
3887	A216	C 4		CV3	
3888	A217	C 4		CV3	
3889	A219	E 9		ML2	
3890	A220	E 9		ML2	
3895	A221	K16		ML3	
4001	A223	K16		ML3	
4003	A224	B08		ML3	
4008	A225	B08		ML3	
4009	A227	K17		ML3	
4035	G14	A229	C 3	ML8	
4810	I 7	A230	C 3		
4851	C 7	A231	J14		
5010	H13	A232	E10		
5017	H13	A233	C 8		
5025	H24	A233	C 8		
5034	F18	A236	C 8		
5040	F18	A236	C 8		
5043	E19	A237	E 7		
6007	C 4	A240	C 7		
6010	K15	A409	G22		
6011	K15	A432	G17		
6012	I 1	A436	G17		
6042	E19	A437	J18		
6053	J21	A439	J 5		
6277	E13	A440	J18		
6849	E13	A441	J17		
6850	E13	A442	G19		
6851	E13	A444	G19		
6852	E13	A445	G19		
6853	E13	A449	H22		
6854	E13	A450	H 2		
6855	E13	A451	H 2		
7001	I19	A464	H 4		
7015	H 3	A470	E19		
7015	G18	A471	E18		
7030	H22	A474	G14		
7672	F23	A485	G 6		



A7H.1_A6.cdr
121197

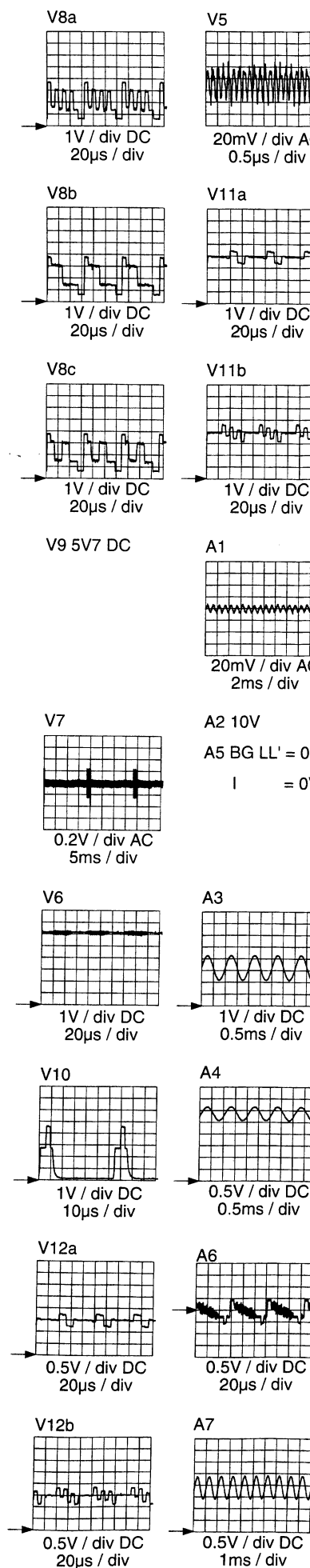




SYSTEM						
ITEMS	FULL MULPLY	PAL BG	PAL I	PAL/S BG/DK	PAL BG/DK	
1135	5.5 Mhz	5.5 Mhz	6 Mhz	5.5 Mhz	5.5 Mhz	
1136	6MHz	---	---	6.5 Mhz	6.5 Mhz	
3243	10K	---	---	10K	---	
3291	JMP	---	---	JMP	---	
3654	2k2	---	---	---	---	
4114	---	JMP	JMP	JMP	JMP	
6128	LL4148	---	---	---	---	
6170	BA682	---	---	1K	1K	
6171	BA682	---	---	---	---	
7015	TD8362E/N5	TD8361E/N5	TD8361E/N5	TD8362E/N5	TD8361E/N5	
7170	BC848B	---	---	---	---	
7654	BC848B	---	---	---	---	
9630	JMP	---	---	---	---	

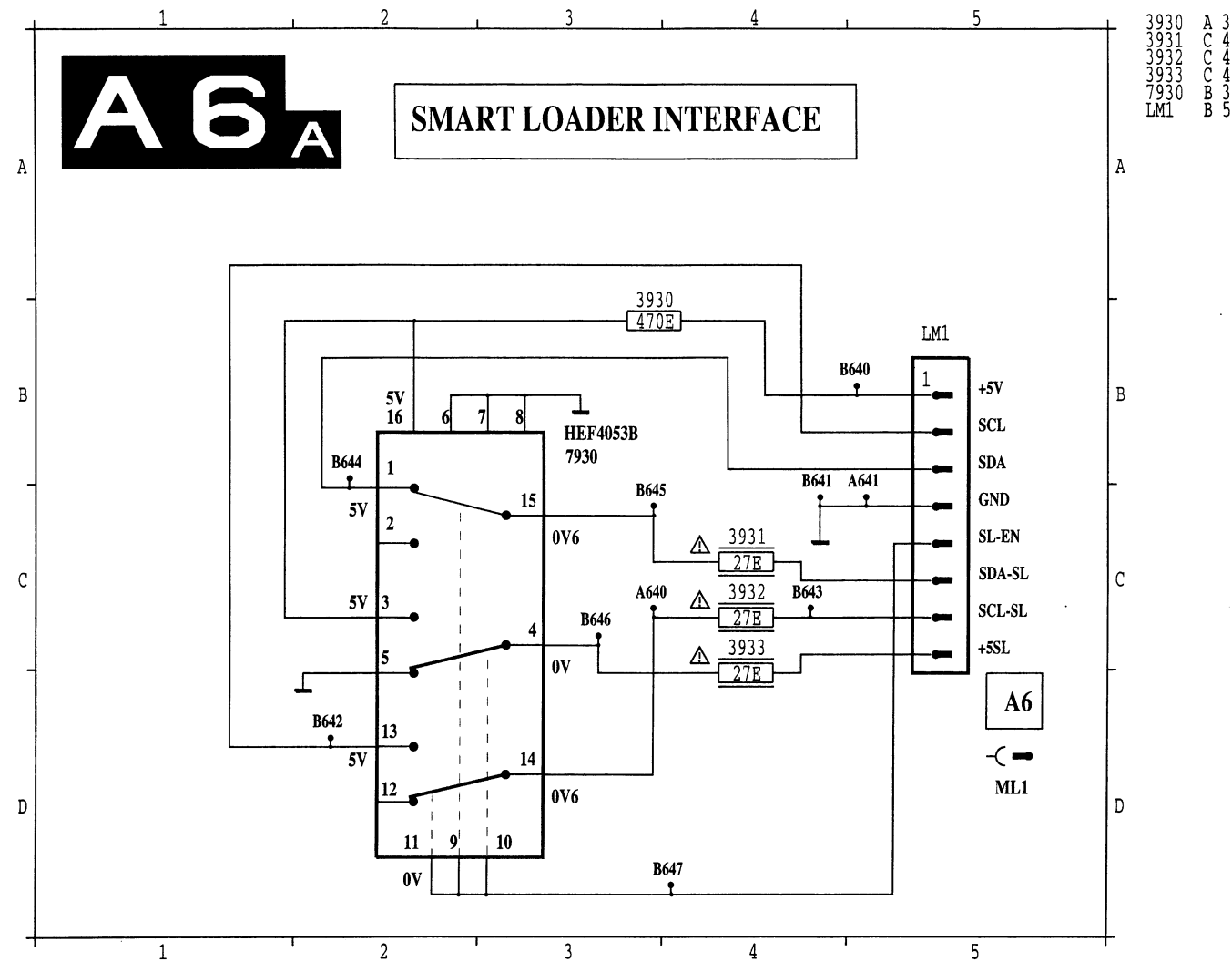
VIDEO + SOUND

A 7

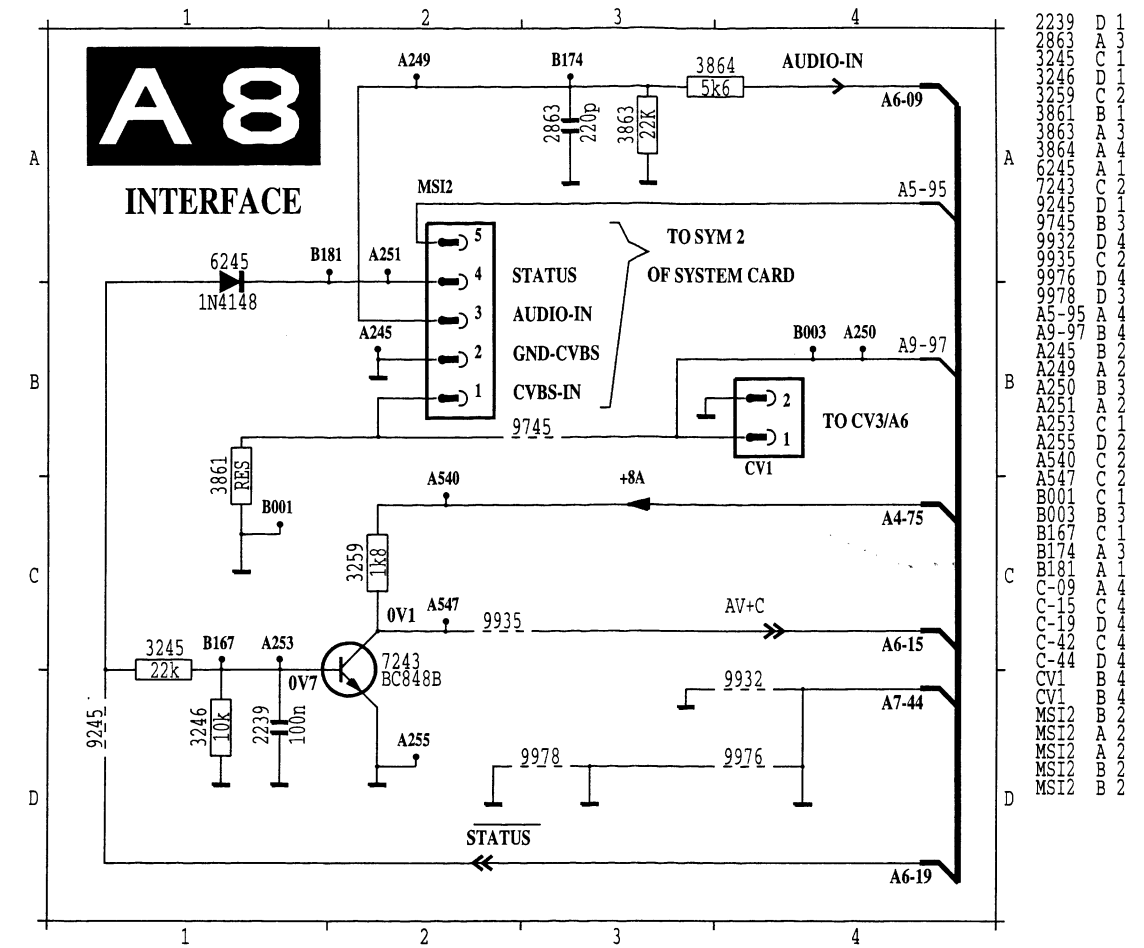
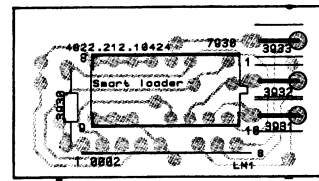


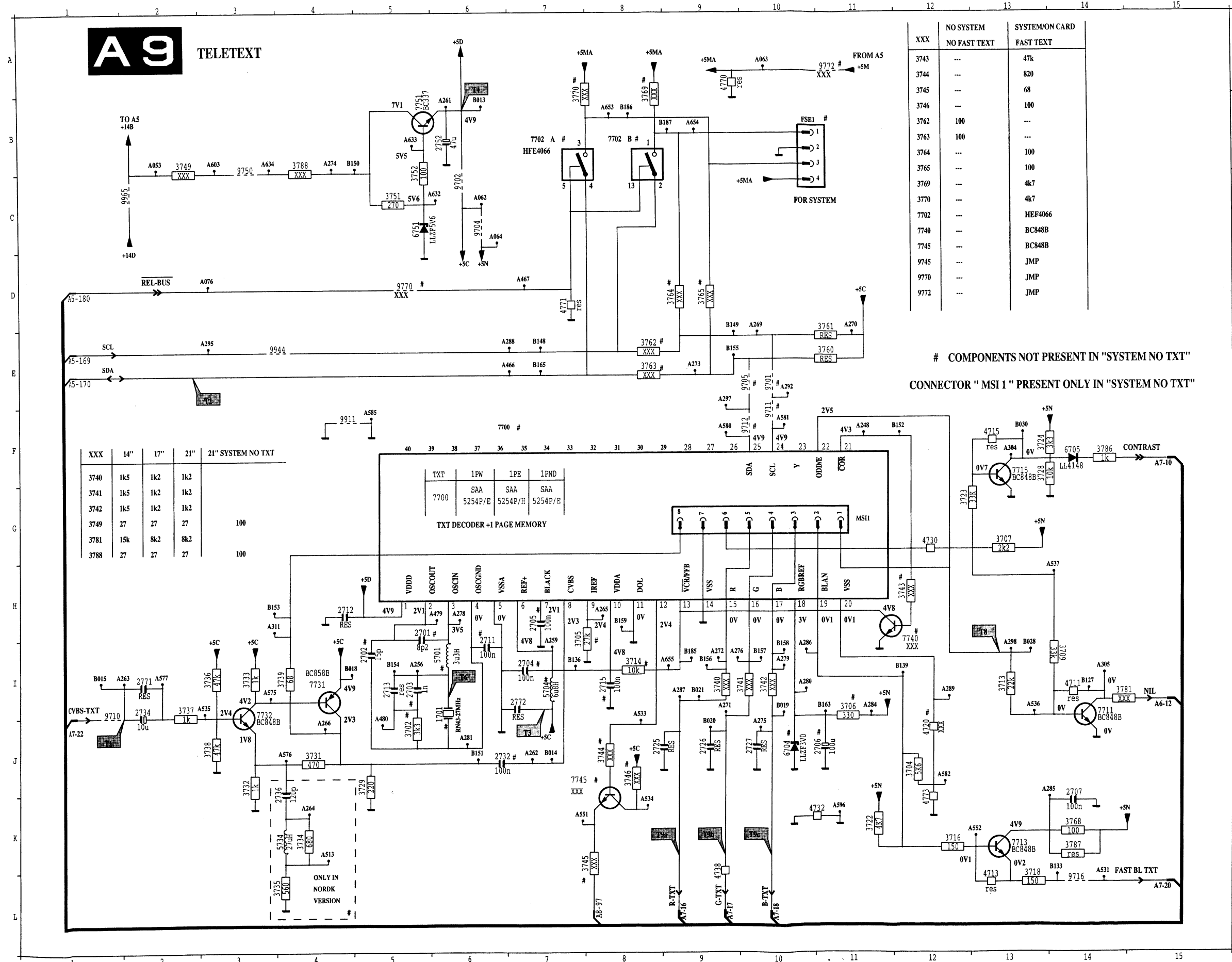
$\rightarrow = 0V$

A7H.1_A7.cdr
131197



Smart loader





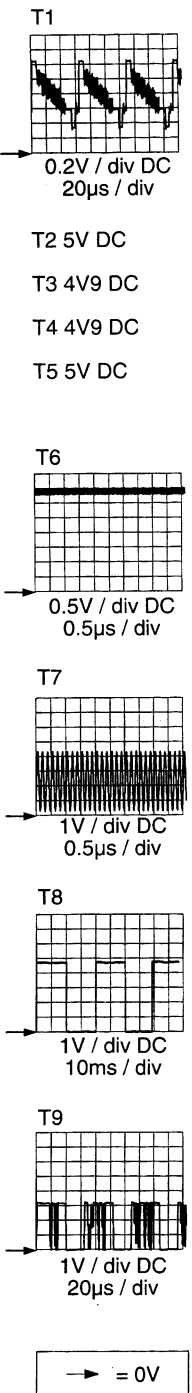
XXX	NO SYSTEM	SYSTEM/ON CARD
	NO FAST TEXT	FAST TEXT
3743	---	47k
3744	---	820
3745	---	68
3746	---	100
3762	100	---
3763	100	---
3764	---	100
3765	---	100
3769	---	4k7
3770	---	4k7
7702	---	HEF4066
7740	---	BC848B
7745	---	BC848B
9745	---	JMP
9770	---	JMP
9772	---	JMP

COMPONENTS NOT PRESENT IN "SYSTEM NO TXT"
CONNECTOR "MSI 1" PRESENT ONLY IN "SYSTEM NO TXT"

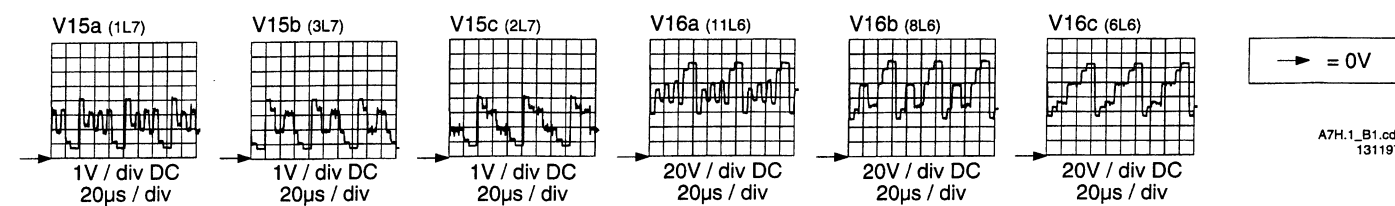
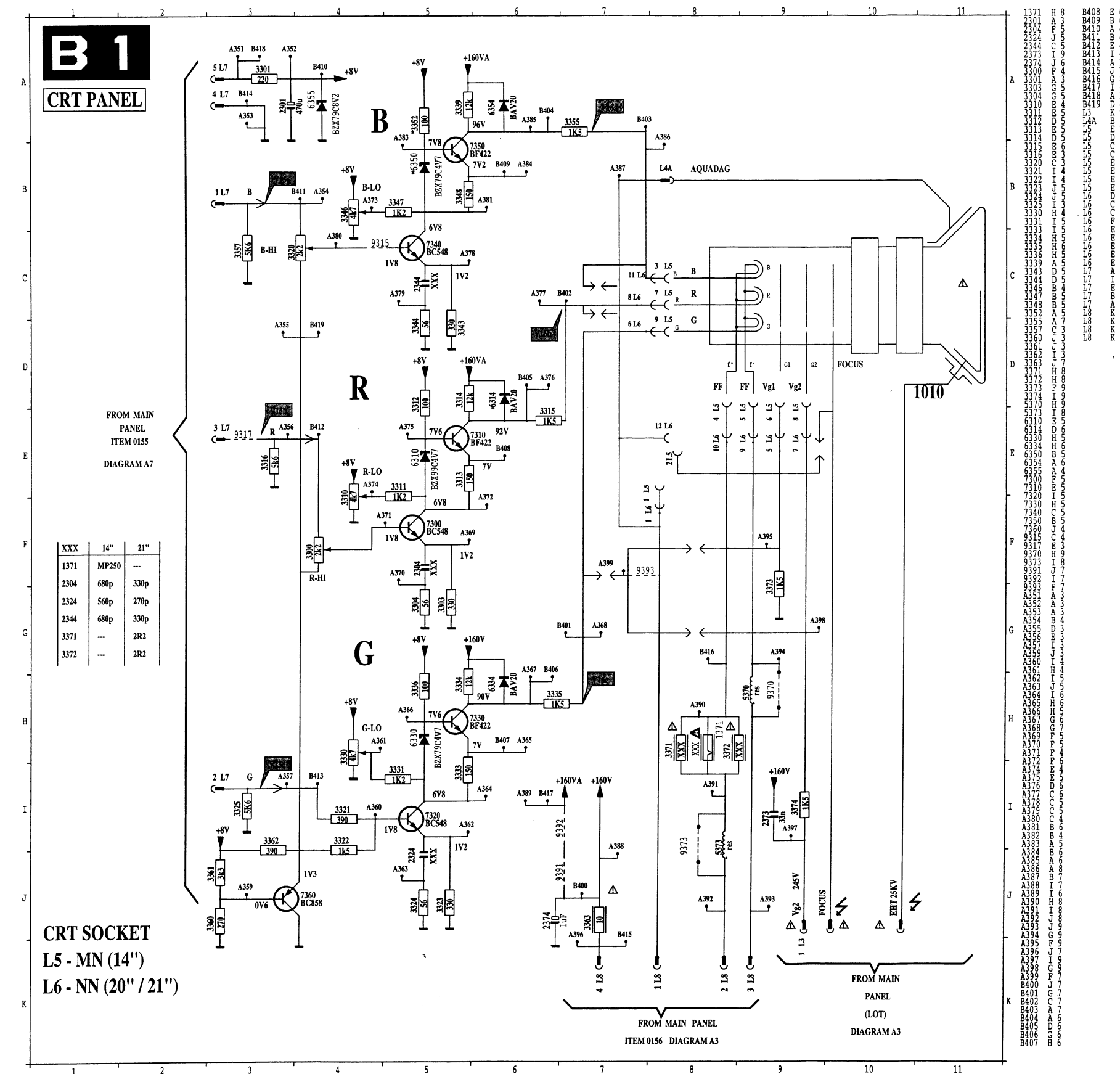
XXX	14"	17"	21"	21" SYSTEM NO TXT
3740	1k5	1k2	1k2	
3741	1k5	1k2	1k2	
3742	1k5	1k2	1k2	
3749	27	27	27	100
3781	15k	8k2	8k2	
3788	27	27	27	100

TXT	1PW	1PE	1PND
7700	SAA 5254P/E	SAA 5254P/H	SAA 5254P/E

TXT DECODER + 1 PAGE MEMORY

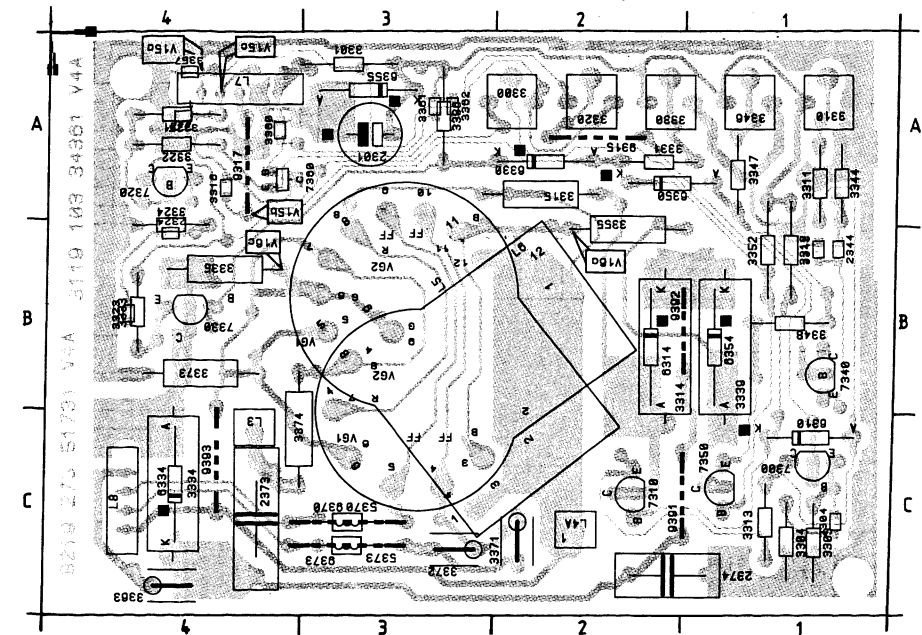


1701 I 6
2701 H 6
2702 H 6
2703 H 6
2704 H 6
2705 H 6
2706 H 6
2707 H 6
2708 H 6
2709 H 6
2710 H 6
2711 H 6
2712 H 6
2713 H 6
2714 H 6
2715 H 6
2716 H 6
2717 H 6
2718 H 6
2719 H 6
2720 H 6
2721 H 6
2722 H 6
2723 H 6
2724 H 6
2725 H 6
2726 H 6
2727 H 6
2728 H 6
2729 H 6
2730 H 6
2731 H 6
2732 H 6
2733 H 6
2734 H 6
2735 H 6
2736 H 6
2737 H 6
2738 H 6
2739 H 6
2740 H 6
2741 H 6
2742 H 6
2743 H 6
2744 H 6
2745 H 6
2746 H 6
2747 H 6
2748 H 6
2749 H 6
2750 H 6
2751 H 6
2752 H 6
2753 H 6
2754 H 6
2755 H 6
2756 H 6
2757 H 6
2758 H 6
2759 H 6
2760 H 6
2761 H 6
2762 H 6
2763 H 6
2764 H 6
2765 H 6
2766 H 6
2767 H 6
2768 H 6
2769 H 6
2770 H 6
2771 H 6
2772 H 6
2773 H 6
2774 H 6
2775 H 6
2776 H 6
2777 H 6
2778 H 6
2779 H 6
2780 H 6
2781 H 6
2782 H 6
2783 H 6
2784 H 6
2785 H 6
2786 H 6
2787 H 6
2788 H 6
2789 H 6
2790 H 6
2791 H 6
2792 H 6
2793 H 6
2794 H 6
2795 H 6
2796 H 6
2797 H 6
2798 H 6
2799 H 6
2800 H 6
2801 H 6
2802 H 6
2803 H 6
2804 H 6
2805 H 6
2806 H 6
2807 H 6
2808 H 6
2809 H 6
2810 H 6
2811 H 6
2812 H 6
2813 H 6
2814 H 6
2815 H 6
2816 H 6
2817 H 6
2818 H 6
2819 H 6
2820 H 6
2821 H 6
2822 H 6
2823 H 6
2824 H 6
2825 H 6
2826 H 6
2827 H 6
2828 H 6
2829 H 6
2830 H 6
2831 H 6
2832 H 6
2833 H 6
2834 H 6
2835 H 6
2836 H 6
2837 H 6
2838 H 6
2839 H 6
2840 H 6
2841 H 6
2842 H 6
2843 H 6
2844 H 6
2845 H 6
2846 H 6
2847 H 6
2848 H 6
2849 H 6
2850 H 6
2851 H 6
2852 H 6
2853 H 6
2854 H 6
2855 H 6
2856 H 6
2857 H 6
2858 H 6
2859 H 6
2860 H 6
2861 H 6
2862 H 6
2863 H 6
2864 H 6
2865 H 6
2866 H 6
2867 H 6
2868 H 6
2869 H 6
2870 H 6
2871 H 6
2872 H 6
2873 H 6
2874 H 6
2875 H 6
2876 H 6
2877 H 6
2878 H 6
2879 H 6
2880 H 6
2881 H 6
2882 H 6
2883 H 6
2884 H 6
2885 H 6
2886 H 6
2887 H 6
2888 H 6
2889 H 6
2890 H 6
2891 H 6
2892 H 6
2893 H 6
2894 H 6
2895 H 6
2896 H 6
2897 H 6
2898 H 6
2899 H 6
2900 H 6
2901 H 6
2902 H 6
2903 H 6
2904 H 6
2905 H 6
2906 H 6
2907 H 6
2908 H 6
2909 H 6
2910 H 6
2911 H 6
2912 H 6
2913 H 6
2914 H 6
2915 H 6
2916 H 6
2917 H 6
2918 H 6
2919 H 6
2920 H 6
2921 H 6
2922 H 6
2923 H 6
2924 H 6
2925 H 6
2926 H 6
2927 H 6
2928 H 6
2929 H 6
2930 H 6
2931 H 6
2932 H 6
2933 H 6
2934 H 6
2935 H 6
2936 H 6
2937 H 6
2938 H 6
2939 H 6
2940 H 6
2941 H 6
2942 H 6
2943 H 6
2944 H 6
2945 H 6
2946 H 6
2947 H 6
2948 H 6
2949 H 6
2950 H 6
2951 H 6
2952 H 6
2953 H 6
2954 H 6
2955 H 6
2956 H 6
2957 H 6
2958 H 6
2959 H 6
2960 H 6
2961 H 6
2962 H 6
2963 H 6
2964 H 6
2965 H 6
2966 H 6
2967 H 6
2968 H 6
2969 H 6
2970 H 6
2971 H 6
2972 H 6
2973 H 6
2974 H 6
2975 H 6
2976 H 6
2977 H 6
2978 H 6
2979 H 6
2980 H 6
2981 H 6
2982 H 6
2983 H 6
2984 H 6
2985 H 6
2986 H 6
2987 H 6
2988 H 6
2989 H 6
2990 H 6
2991 H 6
2992 H 6
2993 H 6
2994 H 6
2995 H 6
2996 H 6
2997 H 6
2998 H 6
2999 H 6
3000 H 6
3001 H 6
3002 H 6
3003 H 6
3004 H 6
3005 H 6
3006 H 6
3007 H 6
3008 H 6
3009 H 6
3010 H 6
3011 H 6
3012 H 6
3013 H 6
3014 H 6
3015 H 6
3016 H 6
3017 H 6
3018 H 6
3019 H 6
3020 H 6
3021 H 6
3022 H 6
3023 H 6
3024 H 6
3025 H 6
3026 H 6
3027 H 6
3028 H 6
3029 H 6
3030 H 6
3031 H 6
3032 H 6
3033 H 6
3034 H 6
3035 H 6
3036 H 6
3037 H 6
3038 H 6
3039 H 6
3040 H 6
3041 H 6
3042 H 6
3043 H 6
3044 H 6
3045 H 6
3046 H 6
3047 H 6
3048 H 6
3049 H 6
3050 H 6
3051 H 6
3052 H 6
3053 H 6
3054 H 6
3055 H 6
3056 H 6
3057 H 6
3058 H 6
3059 H 6
3060 H 6
3061 H 6
3062 H 6
3063 H 6
3064 H 6
3065 H 6
3066 H 6
3067 H 6
3068 H 6
3069 H 6
3070 H 6
3071 H 6
3072 H 6
3073 H 6
3074 H 6
3075 H 6
3076 H 6
3077 H 6
3078 H 6
3079 H 6
3080 H 6
3081 H 6
3082 H 6
3083 H 6
3084 H 6
3085 H 6
3086 H 6
3087 H 6
3088 H 6
3089 H 6
3090 H 6
3091 H 6
3092 H 6
3093 H 6
3094 H 6
3095 H 6
3096 H 6
3097 H 6
3098 H 6
3099 H 6
3100 H 6
3101 H 6
3102 H 6
3103 H 6
3104 H 6
3105 H 6
3106 H 6
3107 H 6
3108 H 6
3109 H 6
3110 H 6
3111 H 6
3112 H 6
3113 H 6
3114 H 6
3115 H 6
3116 H 6
3117 H 6
3118 H 6
3119 H 6
3120 H 6
3121 H 6
3122 H 6
3123 H 6
3124 H 6
3125 H 6
3126 H 6
3127 H 6
3128 H 6
3129 H 6
3130 H 6
3131 H 6
3132 H 6
3133 H 6
3134 H 6
3135 H 6
3136 H 6
3137 H 6
3138 H 6
3139 H 6
3140 H 6
3141 H 6
3142 H 6
3143 H 6
3144 H 6
3145 H 6
3146 H 6
3147 H 6
3148 H 6
3149 H 6
3150 H 6
3151 H 6
3152 H 6
3153 H 6
3154 H 6
3155 H 6
3156 H 6
3157 H 6
3158 H 6
3159 H 6
3160 H 6
3161 H 6
3162 H 6
3163 H 6
3164 H 6
3165 H 6
3166 H 6
3167 H 6
3168 H 6
3169 H 6
3170 H 6
3171 H 6
3172 H 6
3173 H 6
3174 H 6
3175 H 6
3176 H 6
3177 H 6
3178 H 6
3179 H 6
3180 H 6
3181 H 6
3182 H 6
3183 H 6
3184 H 6
3185 H 6
3186 H 6
3187 H 6
3188 H 6
3189 H 6
3190 H 6
3191 H 6
3192 H 6
3193 H 6
3194 H 6
3195 H 6
3196 H 6
3197 H 6
3198 H 6
3199 H 6
3200 H 6
3201 H 6
3202 H 6
3203 H 6
3204 H 6
3205 H 6
3206 H 6
3207 H 6
3208 H 6
3209 H 6
3210 H 6
3211 H 6
3212 H 6
3213 H 6
3214 H 6
3215 H 6
3216 H 6
3217 H 6
3218 H 6
3219 H 6
3220 H 6
3221 H 6
3222 H 6
3223 H 6
3224 H 6
3225 H 6
3226 H 6
3227 H 6
3228 H 6
3229 H 6
3230 H 6
3231 H 6
3232 H 6
3233 H 6
3234 H 6
3235 H 6
3236 H 6
3237 H 6
3238 H 6
3239 H 6
3240 H 6
3241 H 6
3242 H 6
3243 H 6
3244 H 6
3245 H 6
3246 H 6
3247 H 6
3248 H 6
3249 H 6
3250 H 6
3251 H 6
3252 H 6
3253 H 6
3254 H 6
3255 H 6
3256 H 6
3257 H 6
3258 H 6
3259 H 6
3260 H 6
3261 H 6
3262 H 6
3263 H 6
3264 H 6
3265 H 6
3266 H 6
3267 H 6
3268 H 6
3269 H 6
3270 H 6
3271 H 6
3272 H 6
3273 H 6
3274 H 6
3275 H 6
3276 H 6
3277 H 6
3278 H 6
3279 H 6
3280 H 6
3281 H 6
3282 H 6
3283 H 6
3284 H 6
3285 H 6
3286 H 6
3287 H 6
3288 H 6
3289 H 6
3290 H 6
3291 H 6
3292 H 6
3293 H 6
3294 H 6
3295 H 6
3296 H 6
3297 H 6
3298 H 6
3299 H 6
3300 H 6
3301 H 6
3302 H 6
3303 H 6
3304 H 6
3305 H 6
3306 H 6
3307 H 6
3308 H 6
3309 H 6
3310 H 6
3311 H 6
3312 H 6
3313 H 6
3314 H 6
3315 H 6
3316 H 6
3317 H 6
3318 H 6
3319 H 6
3320 H 6
3321 H 6
3322 H 6
3323 H 6
3324 H 6
3325 H 6
3326 H 6
3327 H 6
3328 H 6
3329 H 6
3330 H 6
3331 H 6
3332 H 6
3333 H 6
3334 H 6
3335 H 6
3336 H 6
3337 H 6
3338 H 6
3339 H 6
3340 H 6
3341 H 6
3342 H 6
3343 H 6
3344 H 6
3345 H 6
3346 H 6
3347 H 6
3348 H 6
3349 H 6
3350 H 6
3351 H 6
3352 H 6
3353 H 6
3354 H 6
3355 H 6
3356 H 6
3357 H 6
3358 H 6
3359 H 6
3360 H 6
3361 H 6
3362 H 6
3363 H 6
3364 H 6
3365 H 6
3366 H 6
3367 H 6
3368 H 6
3369 H 6
3370 H 6
3371 H 6
3372 H 6
3373 H 6
3374 H 6
3375 H 6
3376 H 6
3377 H 6
3378 H 6
3379 H 6
3380 H 6
3381 H 6
3382 H 6
3383 H 6
3384 H 6
3385 H 6
3386 H 6
3387 H 6
3388 H 6
3389 H 6
3390 H 6
3391 H 6
3392 H 6
3393 H 6
3394 H 6
3395 H 6
3396 H 6
3397 H 6
3398 H 6
3399 H 6
3400 H 6
3401 H 6
3402 H 6
3403 H 6
3404 H 6
3405 H 6
3406 H 6
3407 H 6
3408 H 6
3409 H 6
3410 H 6
3411 H 6
3412 H 6
3413 H 6
3414 H 6
3415 H 6
3416 H 6
3417 H 6
3418 H 6
3419 H 6
3420 H 6
3421 H 6
3422 H 6
3423 H 6
3424 H 6
3425 H 6
3426 H 6
3427 H 6
3428 H 6
3429 H 6
3430 H 6
3431 H 6
3432 H 6
3433 H 6
3434 H 6
3435 H 6
3436 H 6
3437 H 6
3438 H 6
3439 H 6
3440 H 6
3441 H 6
3442 H 6
3443 H 6
3444 H 6
3445 H 6
3446 H 6
3447 H 6
3448 H 6
3449 H 6
3450 H 6
3451 H 6
3452 H 6
3453 H 6
3454 H 6
3455 H 6
3456 H 6
3457 H 6
3458 H 6
3459 H 6
3460 H 6
3461 H 6
3462 H 6
3463 H 6
3464 H 6
3465 H 6
3466 H 6
3467 H 6
3468 H 6
3469 H 6
3470 H 6
3471 H 6
3472 H 6
3473 H 6
3474 H 6
3475 H 6
3476 H 6
3477 H 6
3478 H 6
3479 H 6
3480 H 6
3481 H 6
3482 H 6
3483 H 6
3484 H 6
3485 H 6
3486 H 6
3487 H 6
3488 H 6
3489 H 6
3490 H 6
3491 H 6
3492 H 6
3493 H 6
3494 H 6
3495 H 6
3496 H 6
3497 H 6
3498 H 6
3499 H 6
3500 H 6
3501 H 6
3502 H 6
3503 H 6
3504 H 6
3505 H 6
3506 H 6
3507 H 6
3508 H 6
3509 H 6
3510 H 6
3511 H 6
3512 H 6
3513 H 6
3514 H 6
3515 H 6
3516 H 6
3517 H 6
3518 H 6
3519 H 6
3520 H 6
3521 H 6
3522 H 6
3523 H 6
3524 H 6
3525 H 6
3526 H 6
3527 H 6
3528 H 6
3529 H 6
3530 H 6
3531 H 6
3532 H 6
3533 H 6
3534 H 6
3535 H 6
3536 H 6
3537 H 6
3538 H 6
3539 H 6
3540 H 6
3541 H 6
3542 H 6
3543 H 6
3544 H 6
3545 H 6
3546 H 6
3547 H 6
3548 H 6
3549 H 6
3550 H 6
3551 H 6
3552 H 6
3553 H 6
3554 H 6
3555 H 6
3556 H 6
3557 H 6
3558 H 6
3559 H 6
3560 H 6
3561 H 6
3562 H 6
3563 H 6
3564 H 6
3565 H 6
3566 H 6
3567 H 6
3568 H 6
3569 H 6
3570 H 6
3571 H 6
3572 H 6
3573 H 6
3574 H 6
3575 H 6
3576 H 6
3577 H 6
3578 H 6
3579 H 6
3580 H 6
3581 H 6
3582 H 6
3583 H 6
3584 H 6
3585 H 6
3586 H 6
3587 H 6
3588 H 6
3589 H 6
3590 H 6
3591 H 6
3592 H 6
3593 H 6
3594 H 6
3595 H 6
3596 H 6
3597 H 6
3598 H 6
3599 H 6
3600 H 6
3601 H 6
3602 H 6
3603 H 6
3604 H 6
3605 H 6
3606 H 6
3607 H 6
3608 H 6
3609 H 6
3610 H 6
3611 H 6
3612 H 6
3613 H 6
3614 H 6
3615 H 6
3616 H 6
3617 H 6
3618 H 6
3619 H 6
3620 H 6
3621 H 6
3622 H 6
3623 H 6
3624 H 6
3625 H 6
3626 H 6
3627 H 6
3628 H 6
3629 H 6
3630 H 6
3631 H 6
3632 H 6
3633 H 6
3634 H 6
3635 H 6
3636 H 6
3637 H 6
3638 H 6
3639 H 6
3640 H 6
3641 H 6
3642 H 6
3643 H 6
3644 H 6
3645 H 6
3646 H 6
3647 H 6
3648 H 6
3649 H 6
3650 H 6
3651 H 6
3652 H 6
3653 H 6
3654 H 6
3655 H 6
3656 H 6
3657 H 6
3658 H 6
3659 H 6
3660 H 6
3661 H 6
3662 H 6
3663 H 6
3664 H 6
3665 H 6
3666 H 6
3667 H 6
3668 H 6
3669 H 6
3670 H 6
3671 H 6
3672 H 6
3673 H 6
3674 H 6
3675 H 6
3676 H 6
3677 H 6
3678 H 6
3679 H 6
3680 H 6
3681 H 6
3682 H 6
3683 H 6
3684 H 6
3685 H 6
3686 H 6
3687 H 6
36

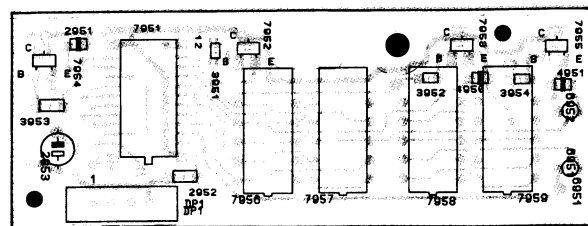
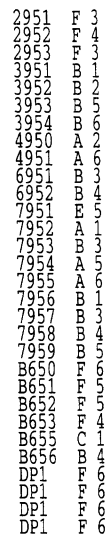


2301 A3	3311 A1	3325 A4*	3348 B1	3374 C3	7310 C1	9392 B1
2304 C1*	3312 B1	3330 A1	3352 B1	5370 C3	7320 A4	9393 C4
2324 B4*	3313 C1	3331 A1	3355 B7	5373 C3	7330 B4	
2344 B1*	3314 B1	3333 B4	3357 A4*	6310 C1	7340 B1	L3 C3
2373 C3	3315 A2	3334 C4	3360 A3*	6314 B1	7350 C1	L4A C2
2374 C1	3316 A4*	3335 B4	3361 A2*	6330 A2	7360 A3*	L5 C3
3300 A2	3320 A2	3336 A2	3362 A2*	6334 C4	9315 A2	L6 B2
3301 A3	3321 A4	3339 B1	3363 C4	6350 A1	9317 A3	L7 A4
3303 C1	3322 A4	3343 B1*	3371 C2	6354 B1	9370 C3	L8 C4
3304 C1	3323 B4*	3346 A1	3372 C2	6355 A3	9373 C3	
3310 A1	3324 B4	3347 A1	3373 B4	7300 C1	9391 C1	

*=Chip component



18

[illegible][illegible]

Circuit description

T-on; In the T-on state, switch TS7504 is switched on. When the switch is on the voltage over resistors R3514-R3515 is a direct measure for the current through winding 2-3. This is a negative voltage. When this voltage becomes below a certain level, TS7501 starts conducting and will switch off the fet. In this way it is prevented that the coil can go into saturation. This could be the case when the output voltage is very low. (long on time of the FET). When the output-voltage becomes too high during T-on the FET will be switched off. (see Output-voltage regulation)

T-off; Due to the stored energy a current will start to flow through D6504, C2515 and winding 2-3. Due to the fact that the current is flowing through this circuit, a voltage with reverse polarity is on winding 1-2. In this way the fet remains off until the current through winding 2-3 reaches zero. Now a new cycle will start. The fet will be switched on and all starts over again.

T-dead; If the output voltage is too high (for example in a low load situation) the FET remains off till the output-voltage is not to high anymore.

1.4 Output voltage regulation

This is done by the circuit D6501, R3509, TS7502, R3505, R3507, R3510. Transistor TS7502 can only conduct when the voltage on the base is 0V7 lower than the voltage the voltage on the emitter. This means that the voltage drop over resistors R3505 and R3507 should be 5V6 (zenerdiode) + 0V7(base-emitter). This is reached when the output voltage exceeds the 100V. Now transistor TS7502 starts conducting, which brings transistor TS7501 in conduction. As a consequence the gate voltage of the fet becomes very low and the fet stops conducting. As long as the output voltage is too high the fet stays out of conduction.

2. Protections

2.1 Overvoltage protection

A disadvantage of a down converter is that if the switch becomes a short-circuit, the output voltage will increase to the input voltage. This could damage circuits. In this power-supply there is a protection to prevent this. If the output voltage becomes higher than 130V, zener diode D6514 starts to conduct. The Vin will be short circuited. This will blown the main fuse 1501 and protect in this way all the other circuits.

2.2 Short-circuit and start-up protection

The short-circuit protection works the same as the start-up protection. If the output-voltage is very low in case of a start-up or a short-circuit condition, The gate will be charged very slowly due to the fact that zenerdiode D6510 is conducting. So the current is not only charging the gate but is also flowing into the output capacitor. In this way it takes a few milliseconds to switch on the fet. Diode D6510 takes also care that the fet never remains in his power consuming (linear) area. If the output voltage is very low, it also takes a large time before the current through winding 2-3 reaches zero. The power supplied to the circuit is in this way very low and protects in this way the circuit.

2.3 Other output voltages

The output voltages +8Sb,+14V +9S and +5S and +5G are made by winding 5-6. During the time that the FET TS7504 is not conducting, energy is transformed to this winding (flyback principle) and the voltages mentioned above are created. From the +9S, the +5S voltage is derived. This voltage is stabilized by transistors TS7505, TS7500 and zenerdiode D6500. D6500 is the reference voltage and TS7505 is delivering the current. When zenerdiode D6500 starts conducting, the voltage over resistor R3502 becomes high and a POR signal is created.

3. Degaussing

R3516 is a dual PTC (2 PTC's in one housing). After switching "on" the set, the PTC is cold, so low ohmic. This makes the degaussing current high. After degaussing the PTC is heated, so high ohmic. This makes the degaussing current low. After degaussing the PTC remains heated by the mains.

4. Line-circuit (Diagram A3)

The primary side of the line-circuit and the deflection coil are connected to the hot earth. The driver-circuit contains an opto-coupler to create isolation between the low-signal parts and the mains. The optocoupler is driven by pin 37 of IC7015-6E via transistor TS7103.

When TS7103 is not conducting,(the LED of the opto-coupler is also out of conduction) TS7421 is also not conducting. In this way TS7422 will conduct and the 96V is placed over winding 2-1 of the LOT. A voltage over winding 2-1 of the LOT will cause a voltage over the windings 8-10, 6-10 and 9-10. Now energy will be transformed from the primary to the secondary-side and charge capacitors C2424 and C2425.

Circuit description

C2430 will be charged to the difference of the +40D and +14D (=26V) when TS7422 is conducting. When TS7422 stops conducting, the voltage of pin 8 of the LOT will become very negative. This forces C2430 to be charged to 26V plus the absolute value of pin 8. When TS7422 starts conducting again the voltage of pin 8 of the LOT will increase and so the voltage on the anode of D6422. In this way the 160V is created. This means that during the off-time of TS7422, C2430 is charged and during the on-time of TS7422, the energy in C2430 is given to C2426.

When transistor TS7103 conducts, the LED of the opto-coupler will be activated. This causes the transistor of the opto-coupler to conduct, which drives TS7421 in conduction. This brings TS7422 out of conduction. Due to this construction, this circuit is protected against missing line-drive pulses. When a line-drive pulse is missed, the line-transistor stays out of conduction, due to the fact that the diode of the opto-coupler is forced into conduction by TS7103. In this way nothing can be damaged when there is no line-drive. Winding 4-3 is an extra winding to help TS7422 to switch.

On the secondary-side of the LOT there is a circuit consisting of TS7423, R3422, R3433, R3434, C2431 and C2432. This circuit creates a pulse when TS7422 switches off. This pulse indicates that horizontal flyback takes place. This information is fed to IC7015-6E to blank the picture.

4.1 Stand-by

The standby signal from the mC is low in case of stand-by. Now TS7103 is brought into conduction by R3112. As mentioned before this will switch off the line-output stage completely.

5. Deflection

5.1 Horizontal deflection

The voltage over capacitor C2422 is the same as the voltage over C2515 (96V, see Diagram A1). When TS7422 is conducting this voltage is placed over the horizontal deflection coil. This causes a linear increasing current through this coil. In this way deflection is created. When TS7422 switches of flyback takes place and it starts all over again. L5424 is used for linearity correction.

5.2 Vertical deflection

Vertical deflection is based on a balance amplifier. Or TS7401 or TS7402 is conducting. This depends on the signal V-drive. If V-drive is high TS7401 conducts and the voltage of C2401 is placed over the deflection coil. Now the picture is written. When V-drive is low, TS7402 conducts and the +40V supply voltage minus the voltage over C2401 is placed over the deflection coil. Flyback takes now place. In this way deflection is generated. R3407 is used to adjust the vertical shift. With this resistor the level of the signal VFB is adjusted. R3402 and C2404 are used to damp oscillation of the deflection coil with his parasitic capacitance. The signal NIL from the mC is used to create a non-interfaced mode. This is done by creating a small DC current through the deflection coil.

PHILIPS Hotel TV

This product has been especially designed by Philips for institutional applications. These istruction for use are a quick reference for installers. A complete instruction for use is also available. For more information ask the nearest Philips branch office.

TV INSTALLATION



The installation requires the remote control RC 8611.

Place the TV on a solid base.

Leave at least 5 cm around each side of the TV for ventilation.

To prevent any faults and unsafe situations, do not place any objects on top of the sets.

The TV can only operate at a mains voltage of 220/240 V-, 50 Hz.

- Select the last TV channel available by pressing TV — or +.
- Press the  button on the local keyboard than press the  button on the remote control for more than 4 seconds.
- ▷ Installation menu appears.
Use the cursor up and down to navigate into the menu lines. Use the cursor left and right to select the menu options. Use the digit button to insert numbers.

MENU

- **Language.**
To select the menu and the On Screen Display language: [ENGLISH - FRANCAIS - DEUTSCH].
- **Configuration.**
Attention : The configuration of the TV is set by Philips, changing the configuration may change the availability of the menu options and the featuring of the TV.
TV system: To choose the TV system [SINGLE - UHF - MULTI F].
Teletext: To enable the teletext [YES - NO].
Clock: To enable the clock [YES - NO].
Radio: To select the radio type [INT (internal) - EXT (external) - NONE].
Interface system: To enable the interface of the system [YES - NO].
- **Number of programs**
TV: To assign the max. number of TV programs [1-99].
INFO: To assign the max. number of info programs [1-99].
RADIO: To assign the max. number of radio programs [1-99].
Note: Radio available only if Configuration-Radio set to INT or EXT.
PAY TV: To assign the max. number of PAY TV programs [1-99].
Note: PAY TV available only if Configuration-Interface system set to YES.
The total max. number of programs available is 120.
- **TV installation**
System: To select the TV system: [EUROPE, FRANCE,UK].
Note: System appears only if "MULTI F" is selected in the Configuration menu.
Search: To search for the video channels or to input the frequency digit.
Fine tune: To adjust the tuning when a video channel is not well tuned.
Programme: To assign a video channel to a TV or INFO or PAY TV program.
More: More program options
 - **Protection:** To set the program protection [YES - NO].
 - **Picture Mute:** To blank the picture of a video program [YES - NO].
 - **Sound Mute:** To mute the sound of a video program [YES - NO].
Store: To store the selections.
- **Radio install**
Note: Available only if configuration radio set to INT or EXT.
Search: To search for the radio channels or to input the frequency digits.
Programme: To assign a radio channel to a radio program.

Protection: To set the program protection [YES - NO].

Store: To store the selections.

• Parameter setting

Initial setting

Switch on channel: To select the switch on program [TV - INFO].

Switch on volume: To set the switch on volume [00 - 63].

Display standby: To set the light intensity of the led display in standby mode [1-5].

Display on: To set the light intensity of the led display in TV on mode [1-5].

Welcome message: To display the welcome message [YES - NO].

To insert the message use the cursor up and down to select the character and the cursor left and right to navigate.

Picture setting

To set picture settings (low-normal-high) that can be recalled with the PICTURE button on the RC.

Block function

Hotel mode: To enable maximum volume, block local, free protected options [YES - NO].

Maximum volume: To set the max. volume limitation [00 - 63].


Block local: To lock the local controls of the TV.

Free protected: To free at once all the protected programs.

Time setting: To set the time of the clock.

Time downloading: To link the time of the clock to the teletext of the selected program (TV-INFO-PAY TV).

Tips

- **To quickly install the TV**
Philips has designed also other tools for quick installation, like the SMART-LOADER or the ACI. For more information ask the nearest Philips branch office.
- **To clean the TV**
Clean the TV using a slightly damp chamois leather.
Never use aggressive cleaning agents.
- **Problems with no solution:**
Switch your TV off and on again with the  button.
Never attempt to repair a defective TV set yourself.
Switch off the TV and call your dealer or TV-technician when nothing helps or when:
 - A white horizontal stripe appears across the whole screen.
 - The red lamp below the screen starts blinking when no buttons are pressed on the remote control.

Environmental information

Your TV contains material which can be recycled and reused. At end of life specialized companies can dismantle the discarded TV to concentrate the reusable materials and to minimize the ammount of materials to be disposed off.
Please find out about local regulations on disposal of your old TV set.

Televisions consume energy in the stand-by mode. Energy consumption contributes to air and water pollution. We advice you to switch off your TV overnight instead of leaving it on stand-by. You save energy and the picture tube is demagnetised which maintains good picture quality .

22

Notes:

12. Spare parts list / Stükliste / Liste des pièces

Chassis A7H.1

23

Main carrier [A1,A3-A9]

Various

▲	4822 276 12597	Mains switch
	4822 276 13307	Operating switch
		assy
▲	4822 265 30389	Con. 2P (0041)
▲	4822 265 40596	Con. 2P (0050)
▲	4822 265 30389	Con. 2P (0051)
▲	4822 265 20709	Con. 2P (0061)
	4822 264 40207	Con. 3P (0040)
	4822 264 40239	Con. 3P (0063)
	4822 290 40284	Con. 3P RFK1
	4822 267 41213	Con. 4P eco duo
	4822 267 40699	Con. 4P (PD1)
▲	4822 267 41208	Con. 4P (0045)
	4822 265 30378	Con. 4P (0048)
	4822 265 30899	Con. 5P (0053)
	4822 267 30546	Con. 6P
	4822 265 40252	Con. 7P RFK1
	4822 290 40295	Con. 7P (0049)
	4822 265 40818	Con. 8P (0056)
▲	4822 267 60243	Con. 21P Scart
	4822 492 71655	Spring fix. IC7157
	4822 492 11528	Spring fix. IC7401, IC7402
	4822 492 70871	Spring fix. IC7422
	4822 492 70871	Spring fix. IC7504
▲	4822 256 92053	Fuse holder (1501)
	4822 256 91918	LED holder
	4822 404 31451	Bracket fix. IR receiver
	4822 402 10524	Tuner bracket (extended)
	4822 404 31452	Tuner bracket
	4822 402 10178	Interface bracket (TV cap)
1001	4822 210 10715	Tuner FL2477/B5 PLL
1015	4822 242 70936	Filter 38.9MHz OFWJ1952M
1015▲	4822 242 72197	Filter 38.9MHz OFWK2950M
1015	4822 242 81388	Filter 38.9MHz OFWG1961M
1015	4822 242 81737	Filter 38.9MHz OFWG1965M
1032	4822 242 72211	Filter 5.5MHz (TPS)
1032	4822 242 81712	Filter 5.5MHz (TPWA04B)
1033	4822 153 30025	Filter 6MHz (TFS)
1033	4822 242 81301	Filter 6.5MHz (TPS)
1033	4822 242 81572	Filter 6MHz (TPS)
1101	4822 242 81423	Filter 38.9MHz OFWL9453M
1135	4822 242 70714	Filter 5.5MHz
1135	4822 242 71841	Filter 6.0MHz
1136▲	4822 242 10316	Filter 6.5MHz
1136	4822 242 71713	Filter 6.0MHz
1501▲	4822 070 33152	Fuse3.15A
1502▲	4822 252 51185	Fuse 630mA
1679	4822 242 10328	X-tal 8MHz
1685	4822 212 30842	IR receiver
1701	4822 242 81246	X-tal 27MHz

II

2001	4822 124 40201	1000µF 20% 16V
2007▲	4822 126 12944	47nF 10% 50V
2008	5322 122 32967	5.6pF 10% 63V
2010	4822 126 10326	180pF 5% 63V
2011	5322 122 32661	56pF 5% 50V
2012	4822 124 42058	33µF 20% 50V
2013	5322 122 31944	3.9pF 5% 50V
2014	5322 126 10343	1.8pF 5% 63V
2015	4822 124 81029	100µF 20% 25V
2016▲	4822 126 10002	100nF 20% 25V
2017▲	4822 124 41579	10µF 20% 50V
2018	5322 122 32661	56pF 5% 50V
2022▲	4822 126 10002	100nF 20% 25V
2023	4822 124 80791	470µF 20% 16V
2025	4822 124 40763	2.2µF 100 V
2025	4822 124 40769	4.7µF 20% 100V
2030	4822 126 13482	470nF 80/20% 16V
2034▲	4822 126 12944	47nF 10% 50V
2037	4822 126 13061	220nF 20% 25V
2041▲	5322 126 10223	4.7nF 10% 63V
2043▲	5322 126 10223	4.7nF 10% 63V
2044▲	5322 126 10223	4.7nF 10% 63V

2045	4822 122 32139	12pF 2% 63V
2045	4822 126 13689	18pF 1% 63V
2050	4822 126 13296	100nF 10% 16V
2053	4822 126 13296	100nF 10% 16V
2080▲	5322 122 32654	22nF 10% 63V
2082	4822 124 40763	2.2µF 100 V
2084	4822 126 13296	100nF 10% 16V
2101▲	5322 126 10223	4.7nF 10% 63V
2104	4822 124 11529	16V 47U 20%
2109	4822 121 41738	270nF 5% 63V
2112	4822 122 33891	3.3nF 10% 63V
2113	4822 122 33891	3.3nF 10% 63V
2117▲	5322 126 10223	4.7nF 10% 63V
2120	4822 122 33175	2.2nF 20% 50V
2120	4822 122 33891	3.3nF 10% 63V
2122	4822 122 33175	2.2nF 20% 50V
2122	5322 122 31865	1.5nF 10% 63V
2123	4822 122 31644	2.2nF 10% 63V
2124▲	4822 124 41579	10µF 20% 50V
2125▲	5322 122 32654	22nF 10% 63V
2126	4822 124 40769	4.7µF 20% 100V
2127	4822 124 40763	2.2µF 100 V
2128	5322 122 32531	100pF 5% 50V
2129▲	4822 124 41579	10µF 20% 50V
2152	4822 124 40763	2.2µF 100 V
2153	5322 122 32531	100pF 5% 50V
2154	4822 122 33175	2.2nF 20% 50V
2155	5322 121 42661	330nF 5% 63V
2156	4822 126 13061	220nF 20% 25V
2158▲	5322 126 10223	4.7nF 10% 63V
2161	4822 124 40201	1000µF 20% 16V
2162	4822 122 33575	220pF 5% 50V
2163	4822 124 40756	1µF 20% 100V
2169	4822 122 33515	82pF 5% 63V
2170▲	4822 122 33177	10nF 20% 50V
2171▲	5322 126 10223	4.7nF 10% 63V
2180▲	4822 124 41579	10µF 20% 50V
2194	4822 122 33175	2.2nF 20% 50V
2196	4822 124 80927	3.3µF 20% 50V
2197▲	4822 126 12944	47nF 10% 50V
2198▲	4822 126 12944	47nF 10% 50V
2239	4822 126 13296	100nF 10% 16V
2248▲	4822 124 41579	10µF 20% 50V
2261	4822 122 33891	3.3nF 10% 63V
2262▲	4822 126 10002	100nF 20% 25V
2265	4822 126 13689	18pF 1% 63V
2267	4822 126 13296	100nF 10% 16V
2268	4822 121 42408	220nF 5% 63V
2271▲	5322 122 32654	22nF 10% 63V
2272▲	5322 122 34123	1nF 10% 50V
2273▲	5322 122 34123	1nF 10% 50V
2274	4822 126 13296	100nF 10% 16V
2275	4822 126 13296	100nF 10% 16V
2279	4822 126 13296	100nF 10% 16V
2280	4822 126 13296	100nF 10% 16V
2290	4822 126 13296	100nF 10% 16V
2291▲	4822 122 33177	10nF 20% 50V
2292▲	4822 122 33177	10nF 20% 50V
2293▲	4822 122 33177	10nF 20% 50V
2295	4822 124 40756	1µF 20% 100V
2297	4822 124 41751	47µF 20% 50V
2298	5322 122 32452	47pF 5% 63V
2340	5322 121 42366	100nF 5% 63V
2345	4822 126 13473	220nF 80-20% 50V
2350▲	5322 126 10223	4.7nF 10% 63V
2351	4822 124 40756	1µF 20% 100V
2354	4822 126 13473	220nF 80-20% 50V
2366▲	4822 122 33177	10nF 20% 50V
2370	4822 124 40756	1µF 20% 100V
2371▲	5322 122 32654	22nF 10% 63V
2400	5322 122 32268	470pF 10% 50V
2401	4822 124 41334	470µF 20% 35V
2401	4822 124 80065	1000µF 20% 50V
2402	4822 124 40243	1.5µF 20% 63V
2402	4822 124 40756	1µF 20% 100V
2404▲	4822 126 12944	47nF 10% 50V
2405	4822 122 33175	2.2nF 20% 50V
2415	4822 121 41922	22nF 10% 250V
2415▲	4822 121 42004	10nF 10% 400V
2420	4822 121 10513	7.5nF 1KV 5%
2420	4822 121 10514	1KV 10N 5%
2421	4822 121 51319	1µF 10% 63V
2422▲	4822 121 42365	330nF 5% 250V
2422▲	4822 121 42376	470nF 5% 250V
2423▲	4822 126 12269	680pF 10% (HR) 2KV
2424	4822 124 42105	1000µF 20% 50V
2424	4822 124 80064	680µF 20% 50V
2425	4822 124 80064	680µF 20% 50V
2426	4822 124 80676	4.7µF 20% 160V
2427	5322 121 42489	33nF 5% 250V
2428	4822 121 51319	1µF 10% 63V
2429	5322 121 42661	330nF 5% 63V
2430	4822 121 42047	180nF 10% 250V

2431▲	5322 126 10223	4.7nF 10% 63V
2432▲	4822 122 33893	18nF 10% 63V
2500	4822 126 13597	330pF 10% 500V
2501▲	4822 126 11524	1.5nF 10% 1KV
2502	4822 121 43856	4.7nF 5% 250V
2503	5322 121 42489	33nF 5% 250V
2505▲	4822 126 14037	2.2nF 20% 250V
2506	4822 121 43343	4.7nF 10% 400V
2507▲	4822 121 10512	275V 220N 20%
2508▲	4822 126 11141	2.2nF 10% 1KV
2509▲	4822 126 11141	2.2nF 10% 1KV
2510▲	4822 121 42004	10nF 10% 400V
2511	4822 124 41596	22µF 20% 50V
2512	4822 124 40201	1000µF 20% 16V
2513	4822 126 13694	68pF 1% 63V
2514	4822 124 40201	1000µF 20% 16V
2515	4822 124 81257	47µF 50/10% 200V
2516	4822 124 11532	47µF 400V 20%
2516	4822 124 11831	68µF 20% 400V
2517▲	5322 122 34123	1nF 10% 50V
2518	5322 122 32452	47pF 5% 63V
2519▲	4822 126 11141	2.2nF 10% 1KV
2520▲	4822 126 11141	2.2nF 10% 1KV
2521▲	4822 124 12126	10µF 20% 400V
2522	4822 126 13599	3.3nF 10% 500V
2525	5322 121 42386	100nF 5% 63V
2526	4822 124 40201	1000µF 20% 16V
2526▲	4822 124 40433	47µF 20% 25V
2527	4822 126 13597	330pF 10% 500V
2528	4822 121 42408	220nF 5% 63V
2529	4822 124 40756	1µF 20% 100V
2531	5322 121 42498	680nF 5% 63V
2532	4822 124 40201	1000µF 20% 16V
2533	4822 124 40201	1000µF 20% 16V
2534	4822 124 81029	100µF 20% 25V
2535	5322 121 42386	100nF 5% 63V
2536	5322 121 42498	680nF 5% 63V
2537	4822 124 41596	22µF 20% 50V
2538	5322 121 42489	33nF 5% 250V
2539▲	4822 124 40433	47µF 20% 25V
2540	4822 121 42408	220nF 5% 63V
2602▲	4822 124 41579	10µF 20% 50V
2604▲	4822 124 41579	10µF 20% 50V
2615	5322 122 32531	100pF 5% 50V
2623	4822 124 40756	1µF 20% 100V
2624	4822 124 40769	4.7µF 20% 100V
2625	4822 122 32535	680pF 10% 63V
2629	4822 124 40763	2.2µF 100 V
2630	4822 124 40763	2.2µF 100 V
2651	4822 122 32535	680pF 10% 63V
2658	4822 126 13694	68pF 1% 63V
2662	4822 122 33175	2.2nF 10% 63V
2663▲	5322 126 10223	4.7nF 10% 50V
2666	4822 124 40255	100µF 20% 63V
2667	5322 122 32531	100pF 5% 50V
2668	4822 124 40255	100µF 20% 63V
2669	5322 122 32448	10pF 5% 50V
2676	5322 122 32452	47pF 5% 63V
2677	5322 122 32448	10pF 5% 50V
2678	5322 122 32448	10pF 5% 50V
2680	5322 122 32658	22pF 5% 50V
2681	5322 122 32658	22pF 5% 50V
2682	4822 126 13061	220nF 20% 25V
2682	5322 122 32531	100pF 5% 50V
2685	4822 124 81029	100µF 20% 25V
2686	4822 126 13482	470nF 80/20% 16V
2689	4822 122 32535	680pF 10% 63V
2701	5322 122 33244	8.2pF 5% 50V
2702	4822 122 32504	15pF 2% 63V
2703	5322 126 10511	1nF 5% 50V
2704▲	4822 126 10002	100nF 20% 25V
2705▲	4822 126 10002	100nF 20% 25V
2706▲	4822 124 41579	10µF 20% 50V
2707	4822 126 13296	10

Spare parts list / Stükliste / Liste des pièces

3353	4822 051 20474	470k 5% 0.1W	3615	4822 117 10834	47k 1% 0.1W	3752	4822 051 20101	100Ω 5% 0.1W	6500	4822 130 34233	BZX79-B5V1
3354	4822 100 11483	10k 30% 0.1W	3617	4822 051 20472	4k7 5% 0.1W	3762	4822 051 20101	100Ω 5% 0.1W	6501	4822 130 34173	BZX79-B5V6
3368	4822 116 83884	47k 5% 0.5W	3618	4822 051 10332	3k3 2% 0.25W	3763	4822 051 20101	100Ω 5% 0.1W	6502	4822 130 34281	BZX79-B15
3369	4822 051 20224	220k 5% 0.1W				3764	4822 051 20101	100Ω 5% 0.1W	6503	4822 130 42488	BYD33D
3370	4822 051 20684	680k 5% 0.1W	3619	4822 050 11002	1k 1% 0.4W	3765	4822 051 20101	100Ω 5% 0.1W	6504	4822 130 41487	BYV95C
3400	4822 051 20333	33k 5% 0.1W	3620	4822 116 83864	10k 5% 0.5W	3768	4822 116 52175	100Ω 5% 0.5W	6506	4822 130 70021	S1NB60
3401	4822 051 20154	150k 5% 0.1W	3621	4822 051 20223	22k 5% 0.1W	3769	4822 051 20472	4k7 5% 0.1W			
3402	4822 051 20681	680Ω 5% 0.1W	3623	4822 117 10833	10k 1% 0.1W	3770	4822 051 20472	4k7 5% 0.1W	6507	5322 130 31938	BYV27-200
			3624	4822 051 20104	100k 5% 0.1W	3781	4822 051 10153	15k 2% 0.25W	6508	4822 209 81397	TL431CLPST
3403	4822 052 10689	68Ω 5% 0.33W	3625	4822 051 20333	33k 5% 0.1W				6509	4822 130 80883	BZV55-C4V7
3404	4822 052 10158	125 5% 0.33W	3628	4822 051 20333	33k 5% 0.1W	3786	4822 051 10102	1k 2% 0.25W	6510	4822 130 34197	BZX79-B12
3405	4822 052 11228	202 5% 0.5W	3630	4822 117 12345	360k 1% 0.1W	3788	4822 053 10279	27Ω 5% 1W	6511	4822 130 34197	BZX79-B12
3405	4822 052 11478	447 5% 0.5W	3631	4822 050 21504	150k 1% 0.6W	3788	4822 116 52175	100Ω 5% 0.5W	6514	5322 130 83584	BZT03-C130
3406	4822 053 10182	1k8 5% 1W				3850	4822 051 20562	5k6 5% 0.1W	6515	5322 209 12018	DF08M
3407	4822 101 11376	220Ω pot.meter				3851	4822 116 83953	75Ω 5% 0.125W	6516	4822 130 32896	BYD33M
3409	4822 051 10102	1k 2% 0.25W				3852	4822 051 20562	5k6 5% 0.1W	6517	5322 130 31932	BZT03-C200
3410	4822 051 20393	39k 5% 0.1W	3632	4822 051 10102	1k 2% 0.25W	3853	4822 116 83953	75Ω 5% 0.125W	6518	4822 130 42488	BYD33D
3412	4822 117 11449	2k2 1% 0.1W	3648	4822 116 52195	47Ω 5% 0.5W	3855	4822 116 83953	75Ω 5% 0.125W			
			3649	4822 116 52195	47Ω 5% 0.5W	3860	4822 051 20471	470Ω 5% 0.1W	6519	5322 130 31938	BYV27-200
3415	4822 053 12279	27Ω 5% 3W	3650	4822 050 11002	1k 1% 0.4W				6520	4822 130 32715	SB340
3415	4822 053 12399	39Ω 5% 3W	3651	4822 117 10833	10k 1% 0.1W	3862	4822 051 20471	470Ω 5% 0.1W	6521	4822 130 42488	BYD33D
3417	4822 116 52272	330k 5% 0.5W	3652	4822 051 20472	4k7 5% 0.1W	3863	4822 051 20223	22k 5% 0.1W	6522	4822 130 30621	1N4148
3419	4822 116 52303	8k2 5% 0.5W	3653	4822 051 20472	4k7 5% 0.1W	3864	4822 116 52289	5k6 5% 0.5W	6523	4822 130 30621	1N4148
3420	4822 116 83882	39k 5% 0.5W	3654	4822 117 11449	2k2 1% 0.1W	3865	4822 116 83953	75Ω 5% 0.125W	6524	4822 130 30621	1N4148
3420	4822 116 83884	47k 5% 0.5W	3655	4822 117 11384	2k7 1% 0.1W	3871	4822 117 11503	220Ω 1% 0.1W	6540	4822 130 34197	BZX79-B12
3421	4822 116 52244	15k 5% 0.5W	3656	4822 116 52283	4k7 5% 0.5W	3875	4822 116 83953	75Ω 5% 0.125W	6602	4822 130 82037	HZT33
3422	4822 117 11384	2k7 1% 0.1W				3876	4822 051 10332	3k3 2% 0.25W	6650	4822 130 34233	BZT03-B5V1
3423	4822 051 20561	560Ω 5% 0.1W	3658	4822 117 11384	2k7 1% 0.1W	3878	4822 117 10965	18k 1% 0.1W	6651	4822 130 80905	BZV55-F5V1
3424	4822 052 10109	10Ω 5% 0.33W	3659	4822 051 20182	1k8 5% 0.1W	3879	4822 051 10473	47k 2% 0.25W			
			3660	4822 116 52175	100Ω 5% 0.5W	3880	4822 051 20562	5k6 5% 0.1W	6658	4822 130 30621	1N4148
3425	4822 053 11129	10Ω 5% 2W	3661	4822 050 11002	1k 1% 0.4W				6663	4822 209 72895	TLUV5320
3426	4822 116 52289	5k6 5% 0.5W	3662	4822 051 20333	33k 5% 0.1W	3881	4822 117 10833	10k 1% 0.1W	6704	4822 130 82886	BZV55-B3V0
3427	4822 052 11108	1Ω 5% 0.5W	3663	4822 117 10353	150Ω 1% 0.1W	3887	4822 051 20471	470Ω 5% 0.1W	6705	4822 130 80446	BAS32L
3428	4822 052 11108	1Ω 5% 0.5W	3664	4822 051 20683	68k 5% 0.1W	3888	4822 117 11139	1k5 1% 0.1W	6751	4822 130 81227	BZV55-F5V6
3430	4822 052 10821	820Ω 5% 0.33W	3665	4822 051 20683	68k 5% 0.1W	3889	4822 051 10751	750Ω 2% 0.25W	6849	4822 130 30621	1N4148
3431	4822 052 11471	470Ω 5% 0.5W	3666	4822 116 83868	150Ω 5% 0.5W	3890	4822 117 11507	6k8 1% 0.1W	6850	4822 130 80446	BAS32L
3432	4822 051 20105	1M 5% 0.1W				3891	4822 117 10833	10k 1% 0.1W	6851	4822 130 80446	BAS32L
3432	4822 051 20225	2M2 5% 0.1W	3667	4822 116 83864	10k 5% 0.5W	3892	4822 116 52269	3k3 5% 0.5W	6852	4822 130 80446	BAS32L
3433	4822 051 20393	39k 5% 0.1W	3668	4822 051 20433	43k 5% 0.1W	3895	4822 116 83953	75Ω 5% 0.125W	6853	4822 130 80446	BAS32L
3434	4822 051 20223	22k 5% 0.1W	3669	4822 117 10833	10k 1% 0.1W	4xxx	4822 051 10008	0Ω 5% 0.25W			
			3670	4822 116 83864	10k 5% 0.5W				6854	4822 130 80446	BAS32L
3436	4822 052 10151	150Ω 5% 0.33W	3671	4822 051 10103	10k 2% 0.25W				6855	4822 130 80446	BAS32L
3437	4822 053 11103	10k 5% 2W	3672	4822 117 11449	2k2 1% 0.1W				6865	4822 130 80446	BAS32L
3440	4822 116 83868	150Ω 5% 0.5W	3673	4822 117 10833	10k 1% 0.1W						
3500	4822 051 20331	330Ω 5% 0.1W	3674	4822 117 11449	2k2 1% 0.1W	5010	4822 157 63081	0.56μH 20%			
3500	4822 117 11504	270Ω 1% 0.1W	3676	4822 116 83864	10k 5% 0.5W	5010	4822 157 63858	0.39μH			
3501	4822 051 20101	100Ω 5% 0.1W	3677	4822 117 11384	2k7 1% 0.1W	5012	4822 157 53539	0.27μH 5%			
3502	4822 116 83864	10k 5% 0.5W				5032	4822 157 53634	5.6μH 10%	7001	4822 209 80817	L7805CV
3503	4822 116 83864	10k 5% 0.5W	3678	4822 117 11149	82k 1% 0.1W	5040	4822 157 71512	38mH	7015	4822 209 15106	TD8361E/N5
3504	4822 116 52219	330Ω 5% 0.5W	3679	4822 117 11449	2k2 1% 0.1W	5042	4822 157 71518	33mH	7015	4822 209 15251	TD8362E/N5
3505	4822 116 52213	180Ω 5% 0.5W	3680	4822 051 20101	100Ω 5% 0.1W	5043	4822 157 71517	38mH	7030	5322 130 41982	BC848B
			3681	4822 051 20472	4k7 5% 0.1W	5043	4822 157 71517	38mH	7103	5322 130 42755	BC847C
3506	4822 117 12094	0.33Ω 5%	3682	4822 051 20101	100Ω 5% 0.1W	5195	4822 157 11213	22μH	7125	4822 209 63105	TD3843/V3
3507	4822 050 21202	1k2 1% 0.6W	3683	4822 051 20101	100Ω 5% 0.1W	5196	4822 157 11213	22μH	7126	5322 130 41982	BC848B
3507	4822 050 21502	1k5 1% 0.6W	3684	4822 051 20332	3k3 5% 0.1W				7127	5322 130 41982	BC848B
3508	4822 053 10682	6k8 5% 1W	3685	4822 051 20332	3k3 5% 0.1W	5415	4822 157 10359	33μH	7140	5322 209 10576	HEF4053BD
3509	4822 116 52271	33k 5% 0.5W	3689	4822 116 52234	100k 5% 0.5W	5415	4822 157 71519	47μH 5%			
3510	4822 117 12096	22k 1%	3694	4822 051 20472	4k7 5% 0.1W	5421	4822 157 11421	100μH 10%	7141	5322 130 41982	BC848B
3511	4822 053 10272	2k7 5% 1W				5422	4822 140 10639	LOT (Line output transformer)	7142	5322 130 41982	BC848B
3512	4822 116 52297	68k 5% 0.5W	3695	4822 051 20472	4k7 5% 0.1W				7143	5322 130 41982	BC848B
3513	4822 053 10334	330k 5% 1W	3696	4822 051 20472	4k7 5% 0.1W	5424	4822 156 50097	Linearity coil	7150	5322 130 41982	BC848B
3514	4822 052 10108	1Ω 5% 0.33W	3697	4822 051 20472	4k7 5% 0.1W	5500	4822 146 10461	Power trafo	7155	5322 130 41982	BC848B
			3698	4822 051 20333	33k 5% 0.1W	5502	4822 146 10748	Power trafo	7156	5322 130 41982	BC848B
3515	4822 052 10108	1Ω 5% 0.33W	3699	4822 051 20332	3k3 5% 0.1W	5503	4822 526 10494	Ferrite bead	7157	4822 209 32531	TD7056A/N2
3516	4822 116 40137	PTC 36Ω 365V	3702	4822 051 20332	3k3 5% 0.1W	5504	4822 157 53348	Choke	7170	5322 130 41982	BC848B
3517	4822 117 11504	270Ω 1% 0.1W	3704	4822 051 20562	5k6 5% 0.1W	5505	4822 157 70826	2.4μH	7243	5322 130 41982	BC848B
3518	4822 117 12952	120k 5% 1W	3705	4822 051 20273	27k 5% 0.1W						
3519	4822 051 20105	1M 5% 0.1W	3706	4822 051 20331	330Ω 5% 0.1W	5506	4822 157 50964	100μH	7250	4822 209 90129	TD8395/N2
3521	4822 117 11504	270Ω 1% 0.1W	3707	4822 117 11449	2k2 1% 0.1W	5509	4822 157 71915	5.6μH	7271	4822 209 12635	TD4665/V4
3523	4822 052 10108	1Ω 5% 0.33W	3709	4822 051 20333	33k 5% 0.1W	5601	4822 157 51462	10μH	7400	4822 130 40981	BC337-25
3524	4822 052 11108	1Ω 5% 0.5W				5671	4822 157 71703	82μH	7401	4822 130 40917	BD238
3525	4822 053 11278	2k7 5% 2W	3713	4822 051 20223	22k 5% 0.1W	5677	4822 152 20678	33μH	7402	4822 130 40923	BD139
			3714	4822 117 10833	10k 1% 0.1W	5701	4822 157 60141	3.3μH	7402	4822 130 44235	BD237
3526	4822 116 83883	470Ω 5% 0.5W	3716	4822 117 10353	150Ω 1% 0.1W	5704	4822 157 60123	6.8μH	7420	4822 130 10025	CNX82A
3527	4822 116 52271	33k 5% 0.5W	3718	4822 117 10353	150Ω 1% 0.1W				7421	5322 130 44647	BC368
3528	4822 050 24702	4k7 5% 0.6W	3719	4822 117 11454	820Ω 1% 0.1W				7422	4822 130 10206	BU111AX
3529	4822 116 83872	220Ω 5% 0.5W	3720	4822 050 11002	1k 1% 0.4W				7423	5322 130	

7658▲ 4822 209 73852 PMBT2369
7665▲ 5322 130 41982 BC848B
7670▲ 5322 130 41982 BC848B
7672▲ 5322 130 41982 BC848B
7674▲ 5322 130 41982 BC848B
7685 4822 209 32709 ST24C04FB1
7700 4822 209 90125 SAA5254/P/E/MIC
7702 5322 209 10357 HEF4066BP

7711▲ 5322 130 41982 BC848B
7713▲ 5322 130 41982 BC848B
7715▲ 5322 130 41982 BC848B
7731 5322 130 41983 BC858B
7732▲ 5322 130 41982 BC848B
7740▲ 5322 130 41982 BC848B
7745▲ 5322 130 41982 BC848B
7751▲ 4822 130 41344 BC337-40
7856▲ 5322 130 41982 BC848B
7857 5322 130 41983 BC858B

7858▲ 5322 130 41982 BC848B
7875▲ 5322 130 41982 BC848B
7876▲ 5322 130 41982 BC848B

Smart Loader [A6A]

Various

4822 212 10424 Smart Loader
Panel
4822 265 10457 Con. 8P F-pin
(LM1)



3930 4822 116 83883 470Ω 5% 0.5W
3931▲ 4822 052 10279 27Ω 5% 0.33W
3932▲ 4822 052 10279 27Ω 5% 0.33W
3933▲ 4822 052 10279 27Ω 5% 0.33W



7930 5322 209 10576 HEF4053BD

CRT Panel [B1]

Various

4822 212 11573 CRT panel (14")
4822 212 11574 CRT panel (21")
▲ 4822 255 70261 CRT socket (21")
▲ 4822 255 70306 CRT socket (14"),
8P m-neck
1371▲ 4822 252 51175 Fuse 2.5A



2301 4822 124 80791 470μF 20% 16V
2304 5322 122 31863 330pF 5% 50V
2304 5322 126 10733 680pF 5% 50V
2324 4822 122 33216 270pF 5% 50V
2324 5322 116 80853 560pF 5% 63V
2344 5322 122 31863 330pF 5% 50V
2344 5322 126 10733 680pF 5% 50V
2373 4822 121 41926 33nF 5% 630V
2374 4822 124 81107 4.7μF 20% 250V



3300 4822 100 12226 2k2 30% LIN0.1W
3301 4822 116 83872 220Ω 5% 0.5W
3303 4822 116 52219 330Ω 5% 0.5W
3304 4822 116 52197 56Ω 5% 0.5W
3310 4822 100 12227 4k7 30% LIN0.1W
3311 4822 116 52207 1k2 5% 0.5W
3312 4822 116 52175 100Ω 5% 0.5W
3313 4822 116 83868 150Ω 5% 0.5W
3314▲ 4822 053 11123 12k 5% 2W

3315 4822 050 21502 1k5 1% 0.6W
3316 4822 051 20562 5k6 5% 0.1W
3320 4822 100 12226 2k2 30% LIN0.1W
3321 4822 116 52222 390Ω 5% 0.5W
3322 4822 116 52243 1k5 5% 0.5W
3323 4822 051 20331 330Ω 5% 0.1W
3324 4822 116 52197 56Ω 5% 0.5W
3325 4822 051 20562 5k6 5% 0.1W
3330 4822 100 12227 4k7 30% LIN0.1W
3331 4822 116 52207 1k2 5% 0.5W

3333 4822 116 83868 150Ω 5% 0.5W
3334▲ 4822 053 11123 12k 5% 2W
3335 4822 050 21502 1k5 1% 0.6W

3336 4822 116 52175 100Ω 5% 0.5W
3339▲ 4822 053 11123 12k 5% 2W
3343 4822 051 20331 330Ω 5% 0.1W
3344 4822 116 52197 56Ω 5% 0.5W
3346 4822 100 12227 4k7 30% lin.1W
3347 4822 116 52207 1k2 5% 0.5W
3348 4822 116 83868 150Ω 5% 0.5W

3352 4822 116 52175 100Ω 5% 0.5W
3355 4822 050 21502 1k5 1% 0.6W
3357 4822 051 20562 5k6 5% 0.1W
3360 4822 117 11504 270Ω 1% 0.1W
3361▲ 4822 051 20332 3k3 5% 0.1W
3362 4822 051 20681 680Ω 5% 0.1W
3363▲ 4822 052 10109 10Ω 5% 0.33W
3371▲ 4822 052 10228 2Ω 5% 0.33W
3372▲ 4822 052 10228 2Ω 5% 0.33W
3373 4822 050 21502 1k5 1% 0.6W
3374 4822 050 21502 1k5 1% 0.6W



6310 4822 130 34174 BZX79-B4V7
6314▲ 4822 130 42489 BYD33G
6330 4822 130 34174 BZX79-B4V7
6334▲ 4822 130 42489 BYD33G
6350 4822 130 34174 BZX79-B4V7
6354▲ 4822 130 42489 BYD33G
6355 4822 130 34382 BZX79-B8V2



7300 4822 130 40937 BC548B
7310 4822 130 41782 BF422
7320 4822 130 40937 BC548B
7330 4822 130 41782 BF422
7340 4822 130 40937 BC548B
7350 4822 130 41782 BF422
7360 5322 130 41983 BC858B

Clock Panel [E1]

Various

4822 212 10525 Clock panel
4822 267 41047 Con. 4P



2951▲ 4822 126 10002 100nF 20% 25V
2952 4822 122 33498 2.7nF 10% 63V
2953 4822 124 81029 100μF 20% 25V



3951▲ 4822 051 20101 100Ω 5% 0.1W
3952▲ 4822 051 20101 100Ω 5% 0.1W
3953 4822 051 10101 100Ω 2% 0.25W
3954▲ 4822 051 20101 100Ω 5% 0.1W



6951 4822 130 80312 TLHY4400
6952 4822 130 10212 TLHR4401



7951 4822 209 32304 SAA1064T
7952 4822 130 42615 BC817-40
7953 4822 130 42615 BC817-40
7954 4822 130 42615 BC817-40
7955 4822 130 42615 BC817-40
7956 4822 130 10213 LTS4801G
7957 4822 130 10213 LTS4801G
7958 4822 130 10213 LTS4801G
7959 4822 130 10213 LTS4801G

Radio Panel [E2]

Various

4822 212 10426 Radio Panel
4822 267 40722 Con. 6p (RP1)
4822 264 40239 Con. 3P (RM1)
1910 4822 210 10725 Radio tuner



2901▲ 4822 124 41579 10μF 20% 50V

2902▲ 4822 124 41579 10μF 20% 50V
2903▲ 4822 124 41579 10μF 20% 50V
2905▲ 4822 124 41579 10μF 20% 50V



3901 4822 050 11002 1k 1% 0.4W
3902 4822 116 83884 47k 5% 0.5W
3903 4822 116 52238 12k 5% 0.5W
3904 4822 050 11002 1k 1% 0.4W
3905 4822 050 11002 1k 1% 0.4W
3906 4822 116 52269 3k3 5% 0.5W
3907 4822 116 83884 47k 5% 0.5W
3908 4822 116 52283 4k7 5% 0.5W



6901 4822 130 34167 BZX79-B6V2



7901 5322 209 10576 HEF4053BD
7902 4822 130 40937 BC548B